VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a MINOR, MUNICIPAL permit. The effluent limitations contained in this permit will maintain the water quality standards of 9 VAC 25-260-00 et seq.

1. **PERMIT NO.**: VA0020524

EXISTING PERMIT EXPIRATION DATE: 2/3/2009

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Town of Chatham WWTP
P.O. Box 370
Chatham, Virginia 24531

FACILITY PHYSICAL LOCATION (IF DIFFERENT)

Route 1432 East of Chatham, VA Hillcrest Lane

FACILITY CONTACT:
NAME: John Moore
TITLE: Class II – Chief Operator
PHONE: (434) 432-8304
E-MAIL:

ALTERNATE CONTACT:
NAME:
TITLE:
PHONE: ( )
E-MAIL:

3. **OWNER CONTACT:** (TO RECEIVE PERMIT)
NAME: Robert (Bob) Hanson
TITLE: Public Works Director
COMPANY NAME: Town of Chatham
ADDRESS: P.O. Box 370, Chatham, VA 24531
PHONE: (434) 432-9515
E-MAIL: electbob2003@yahoo.com

4. **PERMIT DRAFTED BY**: DEQ, Water Permits, South Central Regional Office

Permit Writer: Kirk A. Batsel — Date(s): December 30, 2008, January 26, 2009
Reviewed By: Kip D. Foster — Date(s): January 20, 2009

5. **PERMIT CHARACTERIZATION**: (Check as many as appropriate)

( ) Issuance
(X) Reissuance

( ) Revoke & Reissue
( ) Owner Modification
( ) Board Modification
( ) Change of Ownership/Name
Effective Date:

(X) Municipal
SIC Code **4952**
Sewage Systems

( ) Industrial
SIC Code(s) ____

(X) POTW

( ) PVOTW
( ) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

( ) Site-Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio

( ) Interim Limits in Other Document (attach to fact sheet)
( ) Concept Engineering Report Being Approved with Permit
( ) Possible Interstate Effect

6. **APPLICATION COMPLETE DATE**: August 29, 2008

7. **RECEIVING WATERS CLASSIFICATION:** River basin information.

Outfall No: 001

Receiving Stream:	Cherrystone Creek	7-Day/10-Year Low Flow:	3.66 MGD
River Mile:	2.49	7-Day/10-Year High Flow:	10.88 MGD
Basin:	Roanoke River	1-Day/10-Year Low Flow:	2.17 MGD
Subbasin:	Roanoke River	1-Day/10-Year High Flow:	6.51 MGD
Section:	2	30-Day/5-Year Low Flow:	5.99 MGD
Class:	III	30-Day/10-Year Low Flow:	4.71 MGD
Special Standard(s):	None	Harmonic Mean Flow:	12.94 MGD

8. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Existing municipal discharge resulting from the discharge of treated domestic sewage.

There are no industrial users contributing to the treatment works.

9. **LICENSED WASTEWATER OPERATOR REQUIREMENTS:** ( ) No (X) Yes Class: II

10. **RELIABILITY CLASS:** II

11. **SITE INSPECTION DATE: 10/3/07** **REPORT DATE: 10/22/07**

Performed By: E. Mark Coppage, Sr. Water Compliance Inspector (BRRO-Lynchburg)

Only the transmittal letter and first page of the inspection report is included. See the inspection file for a full copy of the report.

Also included is a picture summary memorandum of before and after facility upgrade photo documentation derived from DEQ files (completed by KAB 12/30/08).

SEE ATTACHMENT 1

12. **DISCHARGE(S) LOCATION DESCRIPTION:** Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Chatham **Quadrant No.: 047C**

SEE ATTACHMENT 2

13. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, ALSO PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

Narrative: This facility was upgraded to a 0.685 MGD extended aeration activated sludge treatment process July 2007. Unit processes include screening, grit removal, a concentric oxidation ditch w/ disc aeration, secondary clarification (3 units), UV disinfection and cascade step aeration. Sludge removed from the secondary clarifiers, is normally routed to one of 2 digesters. Digested sludge may then be stored in a sludge storage basin (or held in an emergency sludge holding tank) prior to land application. The renewal application indicates that stabilized sludge may be land applied by a permitted applicator or may be dewatered via the existing sand drying beds and landfilled.

SEE ATTACHMENT 3

14. **DISCHARGE DESCRIPTION:** Describe each discharge originating from this facility.

SEE ATTACHMENT 4

15. **COMBINED TOTAL FLOW:**

TOTAL: 0.685 MGD (for public notice)

PROCESS FLOW:	MGD (IND.)
NONPROCESS FLOW:	MGD (IND.)
DESIGN FLOW:	0.685 MGD (MUN.)

16. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS:** (Check all which are appropriate)

- X State Water Control Law
- X Clean Water Act
- X VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
- X EPA NPDES Regulation (Federal Register)
- ___ EPA Effluent Guidelines [40 CFR 400 – 471 (industrial)]
- X EPA Effluent Guidelines [40 CFR 133 (municipal 2^0 treatment)]
- X Water Quality Standards (9 VAC 25-260-00 et seq.)
- X Waste load Allocation from a TMDL or River Basin Plan

17. **LIMITATIONS/MONITORING:** Include **all effluent limitations and monitoring requirements** being placed in the permit for each outfall, including any WET limits. If applicable, include any limitations and monitoring requirements being included for sludge and ground water.

There are no applicable limitations and monitoring requirements for ground water.

SEE ATTACHMENT 5

18. **SPECIAL CONDITIONS:** Provide **all actual permit special conditions**, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 6

19. **EFFLUENT/SLUDGE/GROUND WATER LIMITATIONS/MONITORING RATIONALE:** For outfalls, attach any analyses completed (**MIX.EXE and WLA.EXE**) and **STATS printouts** for individual toxic parameters. As a minimum, it will include: waste load allocation (acute, chronic and human health); statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); input data listing; and, effluent limitations determination. Include **all calculations** used for each outfall's set of effluent limits and incorporate the results of **any water quality model(s)**. Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for **limited internal waste streams** and indicator pollutants. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:

WAIVERS/VARIANCES/ALTERNATE LIMITATIONS: Provide justification or refutation rationale for requested **waivers to the permit application (e.g., testing requirements)** or variances/alternatives to required permit conditions/ limitations. This includes, but is not limited to: variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

The permittee submitted a written waiver request for the additional 2 discreet samples required by the NPDES Form 2A Item B.6. and the VPDES Sewage Sludge Permit Application Form - Section A, General Information, Item 8, Page3 of 16. In this case, one of the three required analysis for all parameters was submitted. Specific to his reissuance, and due to time limitations, an application testing waiver was approved for the remaining two analyses. This waiver approval is only applicable to this reissuance.

SUITABLE DATA: What, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

ANTIDEGRADATION REVIEW: Provide all appropriate information/calculations for the antidegradation review.

Tier I: __X__ **Tier II:** _____ **Tier III:** _____

The State Water Control Board's Water Quality Standards regulations include an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier I, existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier II water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier III water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters. The limitations in this permit were developed in accordance with section 303(d)(4) of the Clean Water Act. Therefore, antidegradation restrictions do not apply.

The antidegradation review begins with the Tier determination. The facility discharges directly to Cherrystone Creek. This receiving stream is listed as Category 5A on the 303(d) list for non-attainment of Fecal Coliform and the permit contains water quality-based limits for dissolved oxygen, $CBOD_5$, and TKN (full allocation). Therefore, Cherrystone Creek, at the point of this facility's discharge, is designated as Tier I and no further review is needed. The limitations in this permit were developed in accordance with section 303(d)(4) of the Clean Water Act, therefore, antidegradation restrictions do not apply. Permit limits have been established by determining waste load allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These waste load allocations will provide for the protection and maintenance of all existing uses.

ANTIBACKSLIDING REVIEW: Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

SEE ATTACHMENT 7

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale **for each of the permit's special conditions**, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 8

21. **SLUDGE DISPOSAL PLAN:** Provide a brief description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

The plant has the ability to handle sludge (Biosolids) generation in two pathways. These pathways include the following:
Digested sludge is periodically pumped out and land applied by a permitted Biosolids land applicator, and/or
Dewatered sludge from sand drying beds is hauled to a landfill for final disposal (At present, the plant is not utilizing the sand drying bed option).

22. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

Diesel Fuel for generator (1000 gallons), Gasoline (10 gallons), Oil/grease (10 gallons), hi-test hypochlorite (HTH) powder, Sodium sulfite tablets

23. **RECEIVING WATERS INFORMATION:** Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260 - Part IX) [along with Parts VII and VIII]. Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied. Attach any memoranda or other information which helped to develop permit conditions (i.e. **flow determination memo, tier determinations,** PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

SEE ATTACHMENT 9

24. **303(d) LISTED SEGMENTS:** Indicate if the facility discharges directly to a segment that is listed on the current 303(d) list, if the allocations are specified by an approved TMDL and, if so, provide all appropriate information/calculations. If the facility discharges directly to a stream segment that is on the current 303(d) list, the fact sheet must include a description of how the TMDL requirements are being met.

This facility discharges directly to Cherrystone Creek. This stream segment receiving the effluent is listed as Category 5A on the current approved 303(d) list for non-attainment of Fecal coliform. EPA approved the "Bacteria TMDL development for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek Watersheds" as it drains into Cherrystone Creek on November 4, 2007 for this segment. The SWCB also approved this TMDL on July 31, 2008. The TMDL contains waste load allocations for *E. coli* of 1.13×10^{12} cfu/year (existing load) and 5.67×10^{12} cfu/year (allocated) for the Chatham STP. This permit contains a limit for *E. coli* which conforms to the approved TMDL.

SEE ATTACHMENT 10

25. **CHANGES TO PERMIT:** Use TABLE A to record any changes from the previous permit and the rationale for those changes. Use TABLE B to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 11

26. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET:**

N/A - This is a municipal facility.

27. **EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST:**

SEE ATTACHMENT 12

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from DEQ planning.

The expanded discharge model results (O_2 demanding parameters) limited by this permit will be included in the current amendments of the WQMP.

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

VDH COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the Virginia Dept. of Health and noted how resolved.

Based on their review of the application, the VDH had no objections to the draft permit, as stated by letter dated October 24, 2008 and received in the Lynchburg DEQ office October 27, 2008.

EPA COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA has no objections to the adequacy of the draft permit.

ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from an adjacent state and noted how resolved.

Nno objections were received as to the adequacy of the draft permit.

OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

No objections were received as to the adequacy of the draft permit.

OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT:
Document any comments received from other sources and note how resolved.

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

PUBLIC NOTICE INFORMATION: Comment Period: **Start Date: February 5, 2009**
End Date: March 9, 2009

Persons may comment in writing or by e-mail to the DEQ on the proposed reissuance of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Kirk A. Batsel at: Department of Environmental Quality (DEQ), Blue Ridge Regional Office, 7705 Timberlake Road, Lynchburg, VA 24502. Telephone: 434-582-5120 E-mail: kabatsel@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

The permittee is current with their annual permit maintenance fees.

31. **SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:**

Attachment 1 Site Inspection Report/Memorandum
Attachment 2 Discharge Location/Topographic Map
Attachment 3 Schematic/Plans & Specs/Site Map/Water Balance
Attachment 4 Discharge/Outfall Description
Attachment 5 Limitations/Monitoring
Attachment 6 Special Conditions
Attachment 7 Effluent/Sludge/Ground Water Limitations/Monitoring Rationale/Suitable Data/ Stream Modeling/Antidegradation/Antibacksliding
Attachment 8 Special Conditions Rationale
Attachment ___ Material Stored
Attachment 9 Receiving Waters Info./Tier Determination/STORET Data
Attachment 10 303(d) Listed Segments
Attachment 11 TABLE A and TABLE B - Change Sheets
Attachment ___ NPDES Industrial Permit Rating Worksheet
Attachment 12 EPA/Virginia Draft Permit Submission Checklist
Attachment 13 Chronology Sheet

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTH CENTRAL REGIONAL OFFICE
WATER DIVISION

7705 Timberlake Road Lynchburg, VA 24502

SUBJECT: TOWN OF CHATHAM WWTP, VPDES PERMIT # VA0020524

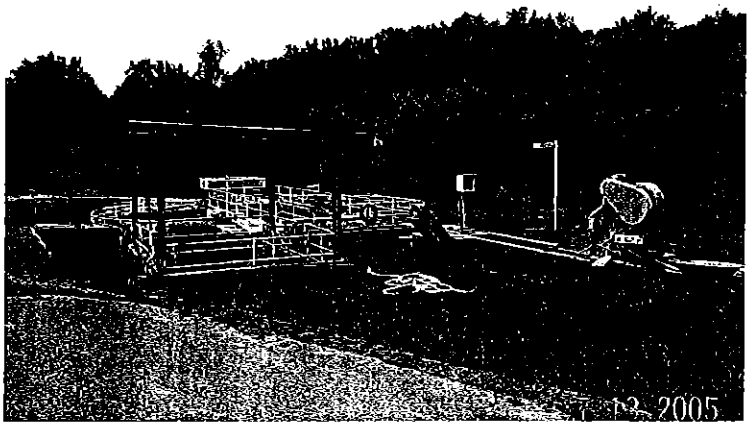
TO: Kip Foster, Water Permits Manager - BRRO

FROM: Kirk Batsel, Sr. Environmental Engineer – BRRO Lynchburg

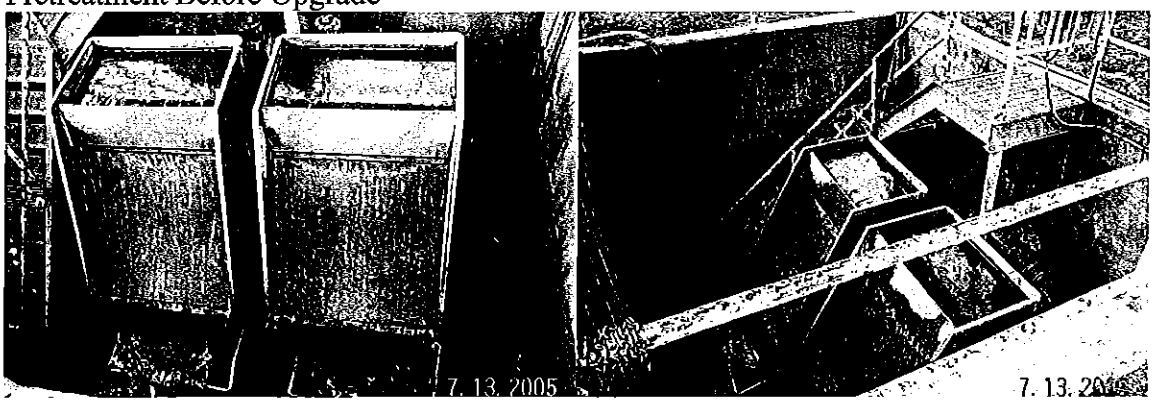
DATE: December 30, 2008

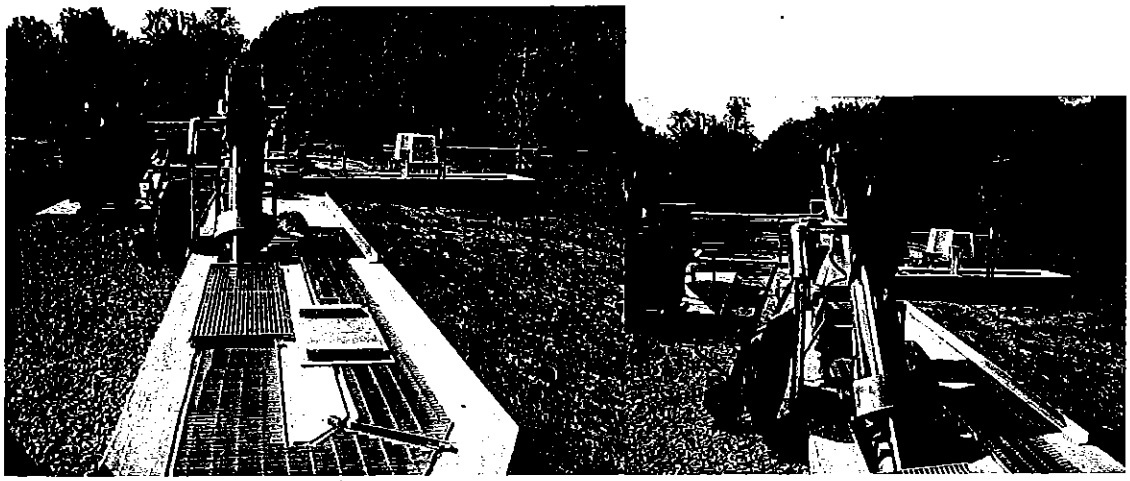
COPIES: Permit Processing file

The subject facility underwent a expansion/upgrade during the last permit term. This expansion resulted in the design flow of the facility increasing from 0.45 MGD to 0.685 MGD. Specific unit processes modified included replacement of the pretreatment screening and grit removal processes, new disc aeration mechanisms and pumps, the addition of a third secondary clarifier, a new aerobic sludge digester, conversion of the disinfection system from chlorine to UV, and an upgrade of the cascade aerator. Please find before and after pictures below.

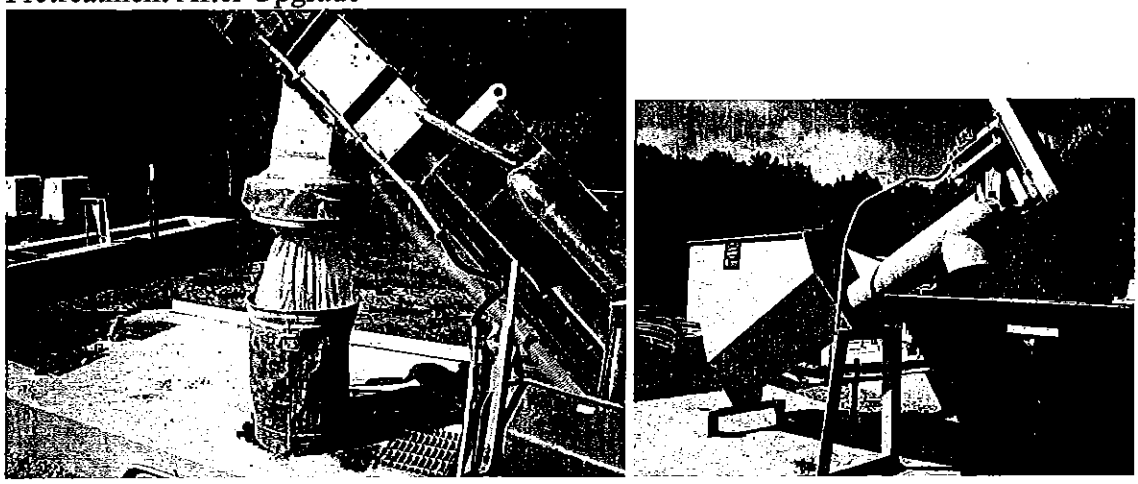


Pretreatment Before Upgrade

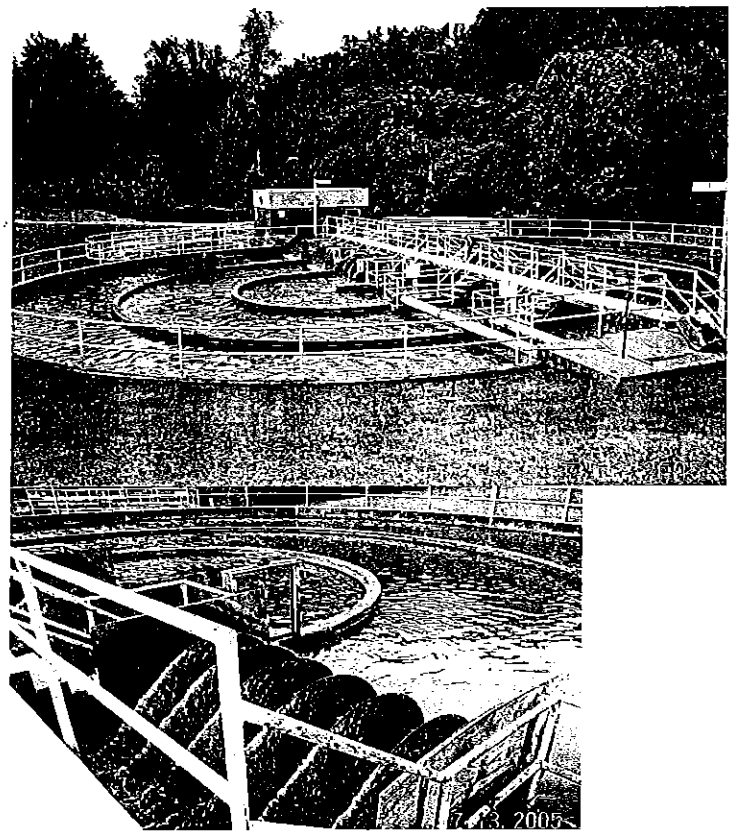




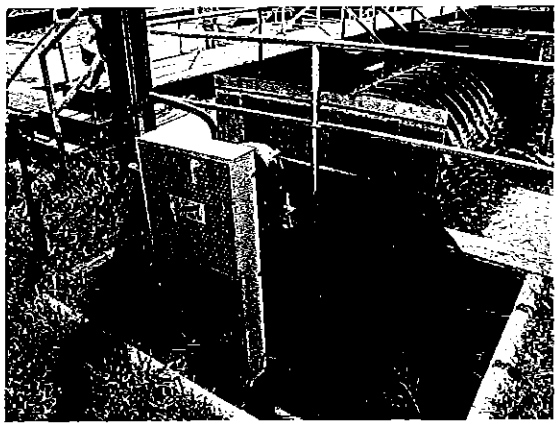
Pretreatment After Upgrade

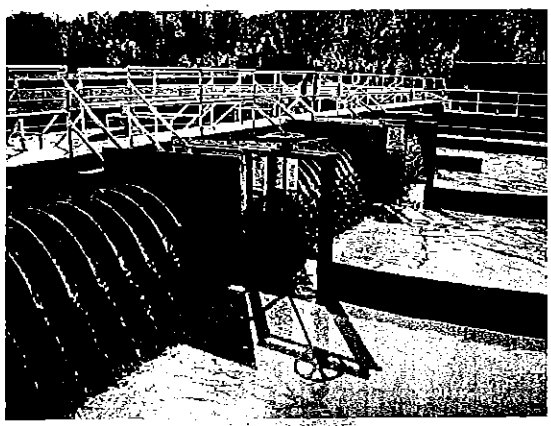


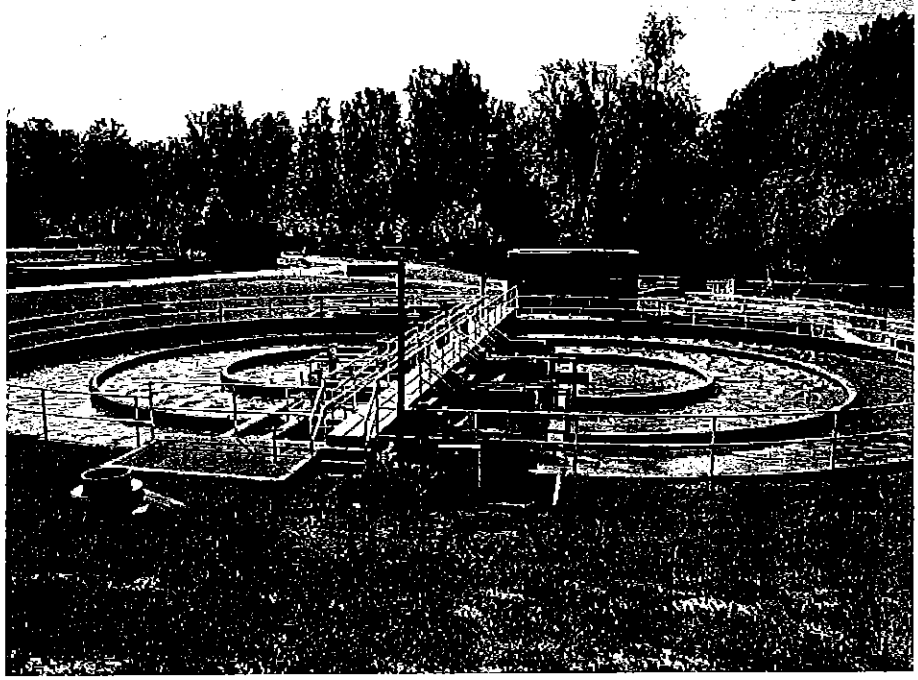
Oxidation ditch Before Upgrade



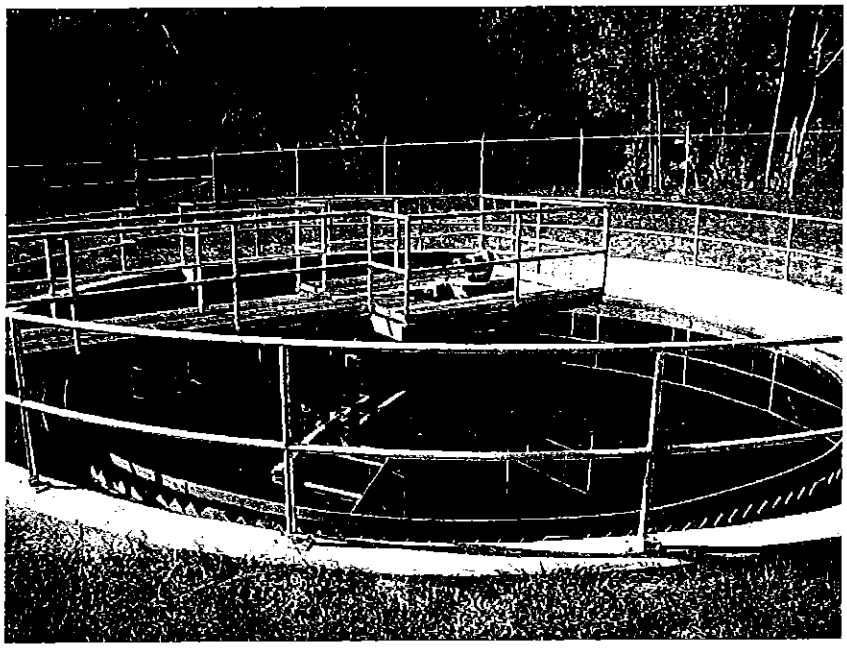
Oxidation Ditch After upgrade (notice new pumps and brushes)



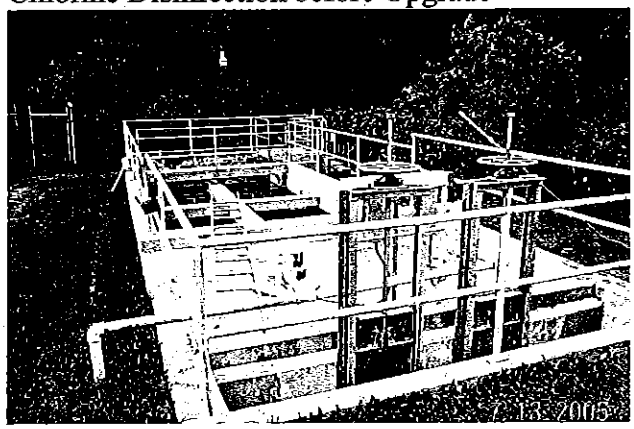




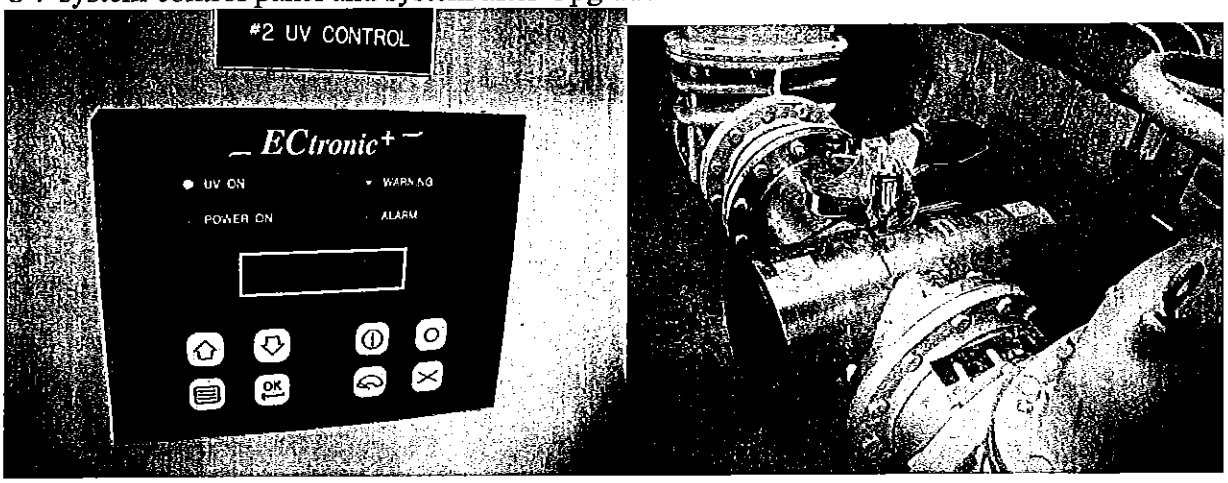
Addition of New 2nd Clarifier after upgrade (now total of three 2nd Clarifiers)



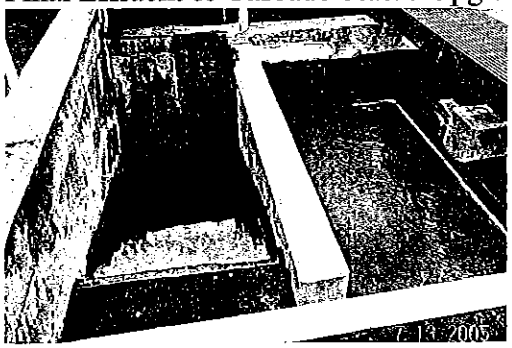
Chlorine Disinfection before Upgrade



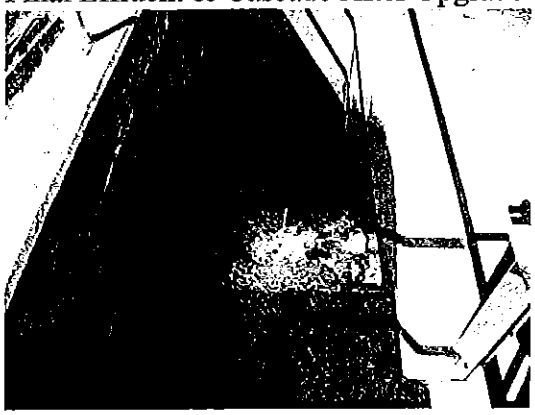
UV system control panel and system after Upgrade



Final Effluent & Cascade before Upgrade



Final Effluent & Cascade After Upgrade



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTH CENTRAL REGIONAL OFFICE
7705 Timberlake Road, Lynchburg, Virginia 24502
(434) 582-5120 Fax (434) 582-5125
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

Thomas L. Henderson
Regional Director

October 22, 2007

Mr. Robert H. Hanson
Town of Chatham - WWTP
PO Box 370
Chatham, VA 24531

Re: Technical and Laboratory Inspection Reports
Town of Chatham WWTP – VPDES Permit Number VA0020524

Dear Mr. Hanson:

For your review I have enclosed the Technical and Laboratory Inspection Reports for the inspections, which took place on October 3, 2007. I have also incorporated into the technical report the digital photographs, which I took on the day of the inspections. Please read the reports, giving special attention to the problems, comments, and recommendations.

After reviewing my inspection notes, the Town of Chatham WWTP documentation, and the digital photographs, I made the following recommendations:

1. *Ensure that the results received from the laboratory are transposed correctly to the facility worksheets for correct entry onto the monthly Discharge Monitoring Reports (DMR).*
2. *When performing the $CBOD_5$ analysis ensure that the GGA results are within the required range of 198 ± 30.5. When the GGA results are not within the required range the results must be flagged on the $CBOD_5$ benchsheets and on the DMR.*
3. *Ensure that the analytical laboratory is documenting the temperature of the samples on the chain of custody form upon receipt.*

4. Repair the 3rd clarifier and put back into service.
5. *Determine and correct the problem with rising solids in the clarifiers.*
6. *UV bulb service and replacement must be documented and spare bulbs/parts should be readily available.*

It is important that you respond to this letter **within 30 days**, outlining the measures you will be employing to correct these deficiencies.

I would like to thank Mr. Richard Haley for his time, cooperation, and assistance on the day of the inspection. I would also like to thank him for promptly providing me with all the documentation, which I requested concerning the Town of Chatham WWTP.

If you have any questions regarding these reports, please feel free to contact me at the above address, by telephone (434) 582-6211 or by at e-mail emcoppage@deq.virginia.gov.

Sincerely,

E. Mark Coppage

E. Mark Coppage
Senior Water Compliance Inspector

Enclosure
cc: DEQ/OWPP: Steve Stell
DEQ/SCRO: File

Facility:	TOWN OF CHATHAM WWTP
County/city:	PITTSYLVANIA COUNTY

VPDES NO.	VA0020524

DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTEWATER FACILITY
INSPECTION REPORT

Inspection date:	10/3/07	Date form completed:	10/16/07
Inspection by:	E. Mark Coppage	Inspection agency:	DEQ/SCRO
Time spent:	2.25 hours	Announced Inspection:	[ ] Yes [X] No
Reviewed by: Fred T. DiLella		Photographs taken at site?	[X] Yes [ ] No
Present at inspection:	Richard Haley		

FACILITY TYPE:	FACILITY CLASS:
(X) Municipal	( ) Major
( ) Industrial	(X) Minor
( ) Federal	( ) Small
( ) VPA/NDC	( ) High Priority ( ) Low Priority

TYPE OF INSPECTION:

Routine	X	Reinspection		Compliance/assistance/complaint	

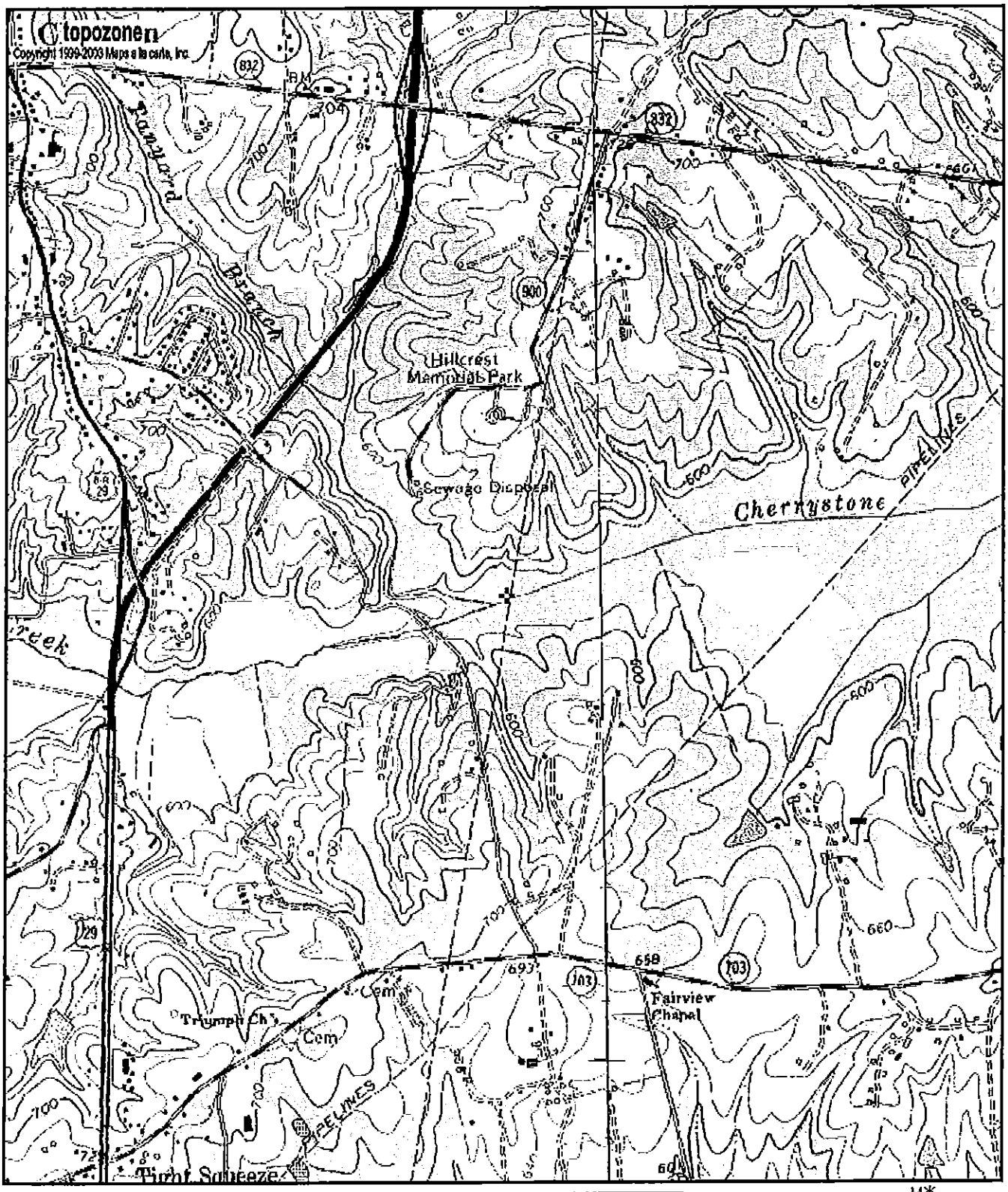
Date of previous inspection:	9/21/05	Agency:	DEQ/SCRO

Population Served:	~2500	Connections Served	Not known				
Last Month Average: Influent	BOD_5 (mg/l)		TSS (mg/l)		Flow (MGD)		
	Other:						
Last Month Average: Effluent **SEPTEMBER 2007**	$CBOD_5$ (mg/l)	2.54	TSS (mg/l)	3.99	Flow (MGD)	0.259	TKN (mg/l) 8.57
	Other:						
Last Quarter Average: Effluent **JULY – SEPT. 2007**	$CBOD_5$ (mg/l)	2.92 Aug & Sept	TSS (mg/l)	3.87	Flow (MGD)	0.247	TKN (mg/l) 5.51 Aug & Sept
	Other: BOD_5 (JULY) – 3.31 mg/l, NH_3 (JULY) – 0.41 mg/l						

Data verified in preface:	Updated?		NO CHANGES?		X
Has there been any new construction?		YES	X	NO	
If yes, were the plans and specifications approved?		YES	X	NO	
DEQ approval date:	8/23/05				

ATTACHMENT 2

DISCHARGE LOCATION/TOPOGRAPHIC MAP



0 0.3 0.6 0.9 1.2 1.5 km

0 0.2 0.4 0.6 0.8 1 mi

M* G

36° 48' 22"N, 79° 22' 42"W (NAD83/WGS84)

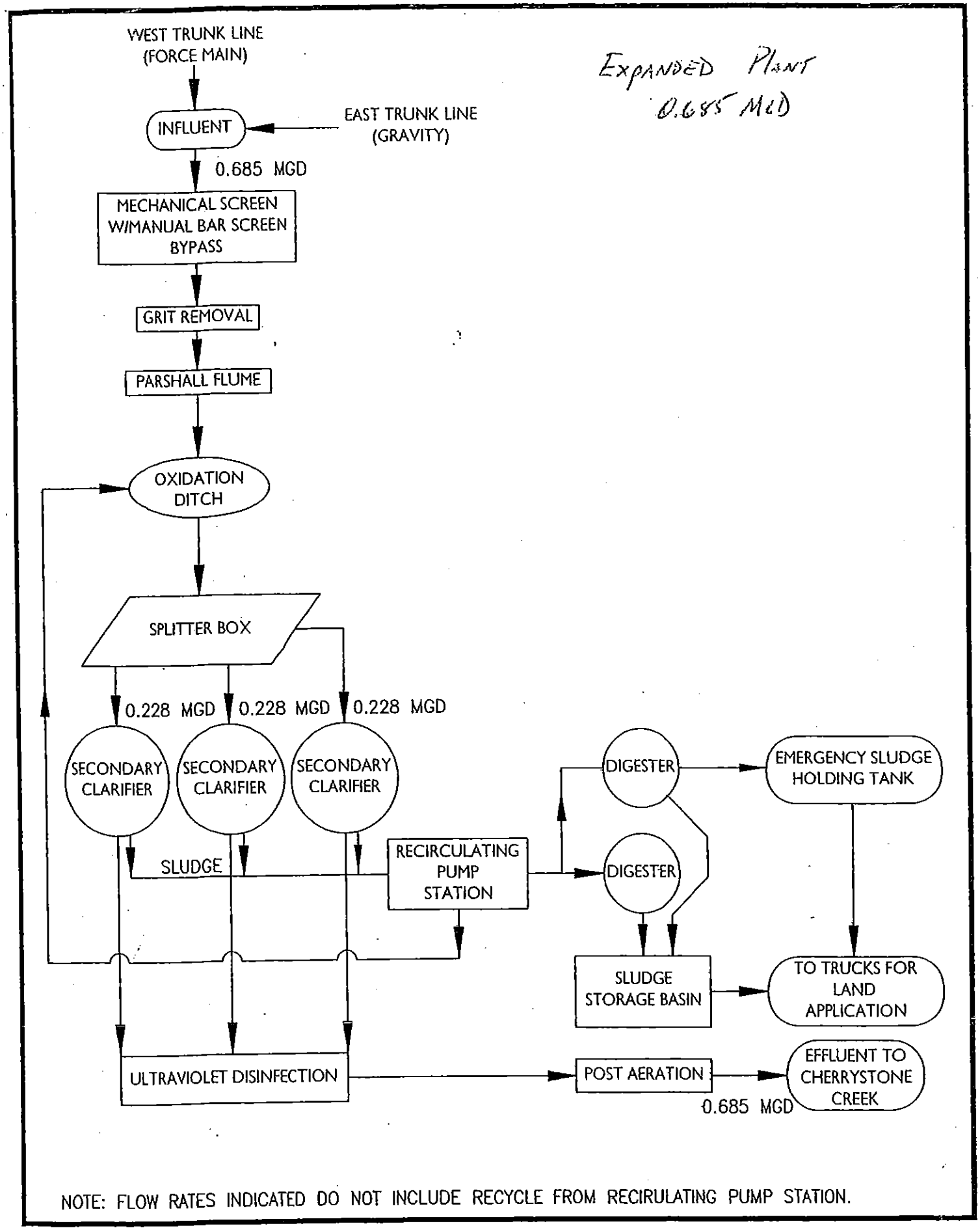
Tanyard Branch, USGS Chatham (VA) Quadrangle

Projection is UTM Zone 17 NAD83 Datum

M=-8.545
G=0.972

ATTACHMENT 3

SCHEMATIC/PLANS & SPECS/SITE MAP/ WATER BALANCE



NOTE: FLOW RATES INDICATED DO NOT INCLUDE RECYCLE FROM RECIRULATING PUMP STATION.

DESIGNED BY MCC	SCALE NOT TO SCALE	FLOW CHART FOR THE TOWN OF CHATHAM WWTP UPGRADE	SHEET EXHIBIT II
DRAWN BY JAG	DATE JUNE 2005		
PROJECT NO. 7647-60			

THOMPSON & LITTON

ATTACHMENT 4

DISCHARGE/OUTFALL DESCRIPTION

TABLE I

NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	36° 48' 22" 79° 22' 42"	Town of Chatham WWTP	Screen/Grit removal unit, concentric oxidation ditch w/ new brush aerators and pumps, 3 secondary clarifiers (parallel), UV disinfection, enhanced cascade step aeration.	Design Flow = 0.685 MGD

(1) List operations contributing to flow
(2) Give brief description, unit by unit
(3) Give maximum 30-day average flow for industry and design flow for municipal

ATTACHMENT 5

LIMITATIONS/MONITORING

MUNICIPAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 DESIGN FLOW: 0.685
Outfall Description: Final effluent following post-aeration.
SIC CODE: 4952 NAICS CODE: 221320

(X) Final Limits ( ) Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE		MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
	mg/l*	kg/day*	mg/l*	kg/d*	mg/l*	mg/l*		
Flow (MGD) [a]	NL		NA		NA	NL	Continuous	TIRE
pH (standard units)	NA		NA		6.0	9.0	1/Day	Grab
$cBOD_5$	25.0	64.8	37.5	97.2	NA	NA	3 Days/Week	8-HC
Total Suspended Solids	30.0	77.8	45.0	116.7	NA	NA	3 Days/Week	8-HC
Total Kjeldahl Nitrogen (as N)	15.0	38.9	22.5	58.3	NA	NA	3 Days/Week	8-HC
Dissolved Oxygen	NA		NA		7.0	NA	1/Day	Grab
E. coli (N/CML - geometric mean) [b]	126		NA		NA	NA	1/Week	Grab
Dissolved Copper (ug/l) [c]	NL	NA	NL	NA	NA	NA	1/ 6 Months	Grab
Dissolved Nickel (ug/l) [c]	NL	NA	NL	NA	NA	NA	1/ 6 Months	Grab
Dissolved Zinc (ug/l) [c]	NL	NA	NL	NA	NA	NA	1/ 6 Months	Grab

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY
TIRE = TOTALIZING, INDICATING AND RECORDING EQUIPMENT

1/6 Months = In accordance with the following schedule: 1st half (January 1 - June 30, **due July 10**); 2nd half (July 1 - December 31, **due January 10**) for a total number of 10 dissolved analyses, per pollutant (Cu, Zn, & Ni), per permit term.

[a] See Part I.B.6. for additional flow requirements.
[b] Samples shall be taken between the hours of 10:00 a.m. and 4:00 p.m.
[c] See Parts I.B.7.a. and I.B.7.b. for quantification levels and reporting requirements, respectively.

The design flow of this treatment facility is 0.685 MGD.
At least 85% removal for BOD5 and TSS must be attained for this effluent.
There shall be no discharge of floating solids or visible foam in other than trace amounts.

BASES FOR LIMITATIONS/MONITORING:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow	Design flow (0.685 MGD)			X
pH	NA	X		
CBOD5 (mg/l)	25/37.5		X	
CBOD5 (kg/day)	Design flow (0.685 MGD)		X	
TSS (mg/l)	30/45	X		
TSS (lbs/day)	Design flow (0.685 MGD)	X		
TKN (mg/l)	15/22.5		X	
TKN (kg/d)	Design flow (0.685 MGD)		X	
Dissolved Oxygen	NA		X	
Dissolved Cu, Dissolved Ni, Dissolved Zn	NA			X

SLUDGE LIMITATIONS/MONITORING

Site Description: Prior to Land Application
SIC CODE: 4952

A. SEWAGE SLUDGE LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage sewage sludge according to the approved Sludge Management Plan.

The pollutants in sewage sludge shall be limited and monitored by the permittee as specified below:

a. Annual Sludge Production Data

Records of the annual total amount of sludge produced, in dry metric tons, by your facility and annual amount of sludge, in dry metric tons, used or disposed in various methods (if applicable) shall be maintained on site.

b. Chemical Pollutant Limitations

(x) Final Limits ( ) Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

SLUDGE CHARACTERISTICS	LIMITATIONS		MONITORING REQUIREMENTS	
	CEILING CONCENTRATION MAXIMUM *	MOMTHLY AVERAGE *	FREQUENCY	SAMPLE TYPE
	mg/kg	mg/kg		
Percent Solids	NA	NL	1/Year	Composite
Total Arsenic	75	41	1/Year	Composite
Total Cadmium	85	39	1/Year	Composite
Total Copper	4300	1500	1/Year	Composite
Total Lead	840	300	1/Year	Composite
Total Mercury	57	17	1/Year	Composite
Total Molybdenum	75	NA	1/Year	Composite
Total Nickel	420	420	1/Year	Composite
Total Selenium	100	100	1/Year	Composite
Total Zinc	7500	2800	1/Year	Composite

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY
* = Dry weight basis, unless otherwise stated.
1/Year = Between January 1 and December 31, due January 10 of following year.

c. Pathogen Reduction Limitations

(1) Class B – Alternative 1

a. Seven samples of the sewage sludge shall be collected at the time the sewage sludge is used or disposed.
b. The geometric mean of the density of fecal coliform in the samples collected in Part I.c.(1)a. above shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis), or

(2) Class B – Alternative 2, aerobic digestion – Sewage sludge shall be agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.

d. Vector Attraction Reduction Limitations

(1) Alternative 1 – The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

3. See Special Condition I.D. for additional sludge requirements.

The bases for the limitations/monitoring are noted in Attachment 7 of this fact sheet.

ATTACHMENT 6

SPECIAL CONDITIONS

B. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Sludge Reopener

This permit may be modified or, alternatively, revoked and reissued if any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act is more stringent than any requirements for sludge use or disposal in this permit, or controls a pollutant or practice not limited in this permit.

b. Water Quality Criteria Reopener

Should effluent monitoring indicate the need for any water quality-based limitation, this permit may be modified or, alternatively, revoked and reissued to incorporate appropriate limitations.

c. Total Maximum Daily Load (TMDL) Reopener

This permit shall be modified or, alternatively, revoked and reissued if any approved waste load allocation procedure, pursuant to section 303(d) of the Clean Water Act, imposes waste load allocations, limits or conditions on the facility that are not consistent with the requirements of this permit.

2. Licensed Wastewater Operator Requirement

The permittee shall employ or contract at least one Class II licensed wastewater works operator for the facility. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for Waterworks and Wastewater Works Operators. The permittee shall notify the DEQ Regional Office, in writing, whenever he is not complying, or has grounds for anticipating he will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

3. Reliability Class Requirement

The permitted treatment works shall meet Reliability Class II.

4. Certificate to Construct (CTC) and Certificate to Operate (CTO) Requirements

The permittee shall, in accordance with the Sewage Collection and Treatment Regulations, obtain a CTC and a CTO from the DEQ prior to constructing wastewater treatment facilities and operating the facilities, respectively.

5. Operations and Maintenance (O & M) Manual

The permittee shall review the existing O & M Manual and notify the DEQ Regional Office, in writing, that it is still accurate and complete. If the O & M Manual is no longer accurate and complete, a revised O & M Manual shall be submitted for approval to the DEQ Regional Office. The permittee shall maintain an accurate, approved O & M Manual for the treatment works and operate the treatment works in accordance with the approved O & M manual. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

a. Treatment works design and operation, routine preventative maintenance of units within the treatment system, critical spare parts inventory and record keeping;

b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
c. Techniques to be employed in the collection, preservation and analysis of effluent and sludge samples;
d. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants characterized in Part I.B.8. (Materials Handling and Storage) that will prevent these materials from reaching state waters; and,

Any changes in the practices and procedures followed by the permittee shall be documented and submitted for approval within 90 days of the effective date of the changes. Upon approval of the submitted manual changes, the revised manual becomes an enforceable part of this permit. Noncompliance with the O & M Manual shall be deemed a violation of the permit.

Letter/Revised Manual Due: No later than June 10, 2009

6. 95% Design Capacity Notification

A written notice and a **plan of action** for ensuring continued compliance with the terms of this permit shall be submitted to the DEQ Regional Office when the monthly average flow influent to the sewage treatment plant reaches 95 percent of the design capacity authorized in this permit for each month of any three consecutive month period. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ Regional Office **no later than 90 days from the third consecutive month for which the flow reached 95 percent of the design capacity.** The plan shall include the necessary steps and a prompt schedule of implementation for controlling any current or reasonably anticipated problem resulting from high influent flows. Failure to submit an adequate plan in a timely manner shall be deemed a violation of this permit.

7. Compliance Reporting Under Part I.A. and I.B.

a. Quantification Levels

(1) Maximum quantification levels (QL) shall be as follows:

Effluent Characteristic	Quantification Level
Chlorine	100.0 µg/l
Total Kjeldahl Nitrogen	5.0 µg/l
D. Copper	2.0 µg/l
D. Nickel	5.0 µg/l
D. Zinc	10.0 µg/l

(2) The permittee may use any approved method which has a QL equal to or lower than the QL listed in a.(1) above. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method.

(3) It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained.

(4) An appropriate analytic method for metals shall be selected from the following list of EPA methods, or any approved method in 40 CFR Part 136, which will achieve a QL that is less than or equal to the QL specified in a.(1) above.

Metal	Analytical Methods
Copper	1638; 1640
Nickel	1638; 1639; 1640
Zinc	1638; 1639

b. Reporting

(1) **Monthly Average** -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the test method QL shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the DMR as calculated. If all data are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report "<QL" for the quantity; otherwise, use the calculated concentration to calculate the quantity.

(2) **Maximum Weekly Average** -- Compliance with the weekly average limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the test method QL shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each complete calendar week entirely contained within the reporting month. The maximum value of the weekly averages thus determined shall be reported on the DMR. If all data for each weekly average are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration for each weekly average is <QL, then report "<QL" for the quantity; otherwise, use the calculated maximum value of the weekly averages to calculate the quantity.

(3) Any single datum required shall be reported as "<QL" if it is less than the test method QL listed in a.(1) above. Otherwise, the numerical value shall be reported.

(4) Monitoring results reported on the DMR shall be reported to the accuracy of the test, which must be capable of at least the same number of significant digits as the permit limit for the given parameter. Rounding the results to the number of significant digits in the permit, where the test method is sensitive enough to report more, is not acceptable and shall not be allowed. If there is not a method allowed by the permit that is accurate enough to measure two significant digits below the value of 1.0, it shall be the permittee's responsibility to provide documentation for DEQ approval demonstrating that only one significant figure can accurately be reported.

8. Water Quality Monitoring

The permittee shall monitor the effluent at outfall 001 for the substances noted in Attachment A of the permit according to the indicated analysis number, quantification level, sample type and frequency. **Monitoring shall be initiated after the start of the third year from the permit's effective date.** Using Attachment A as the reporting form, the data shall be submitted with the next permit reissuance application. Monitoring and analysis shall be conducted in accordance with 40 CFR Part 136 or alternative EPA approved method. It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sample gathering and analytical procedures. The DEQ will use these data for making specific permit decisions in the future. This permit may be modified or, alternatively, revoked and reissued to incorporate limits for any of the substances listed in Attachment A.

Completed Attachment A Due: No later than 9/12/2013.

9. Materials Handling and Storage

Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes and/or other wastes to State waters, except as expressly authorized.

10. Indirect Dischargers

The permittee shall provide adequate notice to the DEQ Regional Office of the following:

a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Section 301 or 306 of Clean Water Act and the State Water Control Law if it were directly discharging those pollutants; and

b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of this permit.

Adequate notice shall include information on (i) the quality and quantity of effluent introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works.

11. Facility Closure Plan

If the permittee does not intend to apply for reissuance of this permit or if any part of the facility presently permitted will not be included in a future permit application, an **approvable closure plan** shall be submitted to the DEQ regional office **90 days before the facility is taken out of service.** The closure plan shall include a plan of action and a schedule.

12. Permit Application Requirement

In accordance with Part II. M. of this permit, a new and complete permit application shall be submitted for the reissuance of this permit.

Application Due: No later than 9/12/2013.

C. SIGNIFICANT DISCHARGE WASTE SURVEY

1. The permittee shall submit to the Department of Environmental Quality (DEQ) Regional Office a survey of all Industrial Users discharging to the POTW. The information shall be submitted on the DEQ Discharger Survey Form, or an equivalent form that includes the quantity and quality of the wastewater. Survey results shall include the identification of significant industrial users of the POTW.

Survey Due: No later than September 10, 2009

2. Should evaluation by the DEQ of results of the Industrial User survey conducted in accordance with 1. above indicate that the permittee is not required to implement a pretreatment program, the requirements for program development described in 4. below may be suspended by the DEQ.

3. If Categorical Industrial User(s) are identified, or if the permittee or DEQ determines that the industrial user(s) have potential to adversely affect the operation of the POTW or cause violation(s) of federal, state or local standards or requirements, **the permittee shall develop and submit to the DEQ Regional Office within one year of written notification by DEQ a pretreatment program for approval.** The program shall enable the permittee to control by permit the Significant Industrial Users* discharging wastewater to the treatment works.

4. The approvable pretreatment program submission shall at a minimum contain the following parts:

a. Legal authority,
b. Program procedures,
c. Funding and resources,
d. Local limits evaluation, and local limits if needed,

e. Enforcement response plan, and
f. List of Significant Industrial Users.

5. Where the permittee is required to develop a pretreatment program, they shall submit to the DEQ Regional Office an annual report no later than January 31 of each year and must include:

a. An updated list of the Significant Industrial Users* showing the categorical standards and local limits applicable to each.

b. A summary of the compliance status of each Significant Industrial User with pretreatment standards and permit requirements.

c. A summary of the number and types of Significant Industrial User sampling and inspections performed by the POTW.

d. All information concerning any interference, upset, VPDES permit or Water Quality Standards violations directly attributable to Significant Industrial Users and enforcement actions taken to alleviate said events.

e. A description of all enforcement actions taken against Significant Industrial Users over the previous 12 months.

f. A summary of any changes to the submitted pretreatment program that have not been previously reported to the DEQ Regional Office.

g. A summary of the permits issued to Significant Industrial Users since the last annual report.

h. POTW and self-monitoring results for Significant Industrial Users determined to be in significant non-compliance during the reporting period.

i. Results of the POTW's influent/effluent/sludge sampling, not previously submitted to DEQ.

j. Copies of newspaper publications of all Significant Industrial Users in significant non-compliance during the reporting period. This is due no later than March 31 of each year.

k. Signature of an authorized representative.

6. The DEQ may require the POTW to institute changes to the legal authority regarding Significant Industrial User permit(s):

a. If the legal authority does not meet the requirements of the Clean Water Act, Water Control Law or State regulations;

b. If problems such as interferences, pass-through, violations of water quality standards or sludge contamination develop or continue; and

c. If federal, state or local requirements change.

* A <u>significant industrial user</u> is one that:

- Has a process wastewater (**) flow of 25,000 gallons or more per average workday;
- Contributes a process wastestream which makes up 5-percent or more of the average dry weather hydraulic or organic capacity of the POTW;
- Is subject to the categorical pretreatment standards; or
- Has significant impact, either singularly or in combination with other Significant Dischargers, on the treatment works or the quality of its effluent.

** Excludes sanitary, non-contact cooling water and boiler blowdown.

D. SEWAGE SLUDGE USE AND DISPOSAL, LIMITATIONS AND MONITORING REQUIREMENTS

1. Sludge Use and Disposal

The permittee shall conduct all sewage sludge use or disposal activities in accordance with the Sludge Management Plan (SMP) approved with the issuance of this permit. Any **proposed changes** in the sewage sludge use or disposal practices or procedures followed by the permittee shall be documented and **submitted for Department of Environmental Quality and Department of Health approval 90 days prior to the effective date of the changes.** Upon approval, the revised SMP becomes an enforceable part of the permit. The permit may be modified or, alternatively, revoked and reissued to incorporate limitations or conditions necessitated by substantive changes in sewage sludge use or disposal practices.

2. Sewage Sludge Limitations and Monitoring Requirements

During the period beginning with the effective date of this permit and lasting until the permit's expiration date, the permittee shall initiate the sewage sludge annual monitoring as specified in Part I.A.3. of this permit.

3. All samples shall be collected and analyzed in accordance with the approved O & M Manual [See special condition I.C.5.].

4. The permittee is required to retain the following information for at least 5 years:

a. The concentrations of each pollutant listed in Part I.A.3.b. (sludge);
b. A description of how the pathogen reduction requirements in Part I.A.3.c. are met;
c. A description of how the vector attraction reduction requirements in Part I.A.3.d. are met;
d. A description of how the management practices specified in the approved Sludge Management Plan and/or this permit are met;
e. A description of how the site restrictions specified in the approved Sludge Management Plan and/or this permit are met;
f. The following certification statement:

"I certify, under penalty of law, that the pathogen requirements in **9 VAC 25-31-710 B.**, vector attraction reduction requirements in **(permittee shall insert one of the vector attraction reduction requirements in 9 VAC 25-31-720 B.1-B.10.)**, the management practices and the site restrictions (if applicable) for each site on which bulk sewage sludge is applied have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, vector attraction reduction requirements, the management practices and the site restrictions (if applicable) have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

ATTACHMENT 7

EFFLUENT/SLUDGE/GROUND WATER LIMITATIONS/MONITORING RATIONALE/SUITABLE DATA/STREAM MODELING/ ANTIDEGRADATION/ANTIBACKSLIDING

THE EFFLUENT LIMITATIONS AND MONITORING RATIONALE ARE BASED ON THE FOLLOWING:

Outfall 001

FLOW – The expanded design of the facility is 0.685 MGD. Flow monitoring is continuous by totalizing, indicating and recording equipment (in MGD). This monitoring frequency and sample type is in accordance with guidance for this size facility and should be appropriate for assessment of treatment plant capacity.

pH – The limits of 6.0 to 9.0 are based on secondary treatment requirements and will protect water quality. The monitoring frequency is set at once per day and the sample type is grab (required for pH). This monitoring frequency and sample type is in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limits.

$cBOD_5$ - The limit of 25.0 mg/l (monthly average) was based on a water quality model. The mass limit of 64.8 kg/d (monthly average) was calculated based on the design flow of 0.685 MGD. The weekly average limit of 37.5 mg/l, which was set at 1.5 times the noted monthly average value, is based on what EPA uses in their guidelines for secondary treatment. The mass limit of 97.2 kg/d (weekly average) was calculated based on the design flow of 0.685 MGD. The monitoring frequency is 3 days per week and the sample type is 8-hour composite (based on the design flow). This monitoring frequency and sample type are in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limit and water quality standards.

TSS - The concentration limits of 30 mg/l (monthly average) and 45 mg/l (weekly average) are continued with the reissuance permit and are in accordance with the Federal Secondary Treatment Regulation established technology limitations and are protective of water quality. The monitoring frequency is three days per week and the sample type is eight-hour composite (based on design flow). This is in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limits and water quality standards. Mass limits, which were calculated based on the design flow of 0.685 MGD, are 77.8 kg/d (171.5 lbs/day), monthly average, and 116.7 kg/day (257.2 lbs/day), weekly average.

TKN - The total Kjeldahl nitrogen limit of 15.0 mg/l (monthly average) is based on a water quality model [See Attachment 9 of fact sheet.]. That limit, in association with the $cBOD_5$ and dissolved oxygen limit, will protect water quality standards, maintaining the required in-stream oxygen levels. This limitation is also protective of ammonia toxicity. The weekly average limit of 22.5, which was set at 1.5 times the noted monthly average value, is based on what EPA uses in their guidelines for secondary treatment. The mass limits of 38.9 kg/d (monthly average) and 58.3 kg/d (weekly average) were calculated based on the design flow of 0.685 MGD. The monitoring frequency is 3 days per week and the sample type is 8-hour composite (based on the design flow). This monitoring frequency and sample type are in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limit and water quality standards.

Dissolved Oxygen - The dissolved oxygen limit of 7.0 mg/l (minimum) is set to protect water quality standards. The limit is based on the assumptions in the DO model developed to support the $cBOD_5$ wasteload allocation and is necessary in order to allow the above noted $cBOD_5$ limits. The monitoring frequency is once per day and the sample type is grab (required for dissolved oxygen). This monitoring frequency and sample type is in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limit and water quality standards.

E. coli - The limit of 126 N/CML (monthly average) is carried over from the previous permit (contained in alternative disinfection language Part B) and is protective of water quality. A derivation of the limit with a margin for expansion, expressed as an annual mass loading (5.67×10^{12} cfu/year), is contained in the Cherrystone Creek Segment, Waste Load Allocation, portion of the approved Banister River Watershed TMDL. The monitoring frequency is set at once per week and the sample type is grab (to be collected between 10am and 4pm). This monitoring frequency and sample type are in accordance with guidance for this size facility and should provide enough data for proper assessment of compliance with the effluent limits.

Copper The current permit requires dissolved copper monitoring. At present, the plant has only operated for approximately 1 ½ years since the issuance of the CTO for the expanded plant (July 31, 2007). In order to more closely quantify dissolved effluent concentrations of copper, the modified expansion permit Part I.A. retained the current semiannual monitoring frequency; however, the permittee failed to monitor and report effluent values for the 1st 2008 semiannual period. Therefore, only one effluent value, post expansion, is available for evaluation. In accordance with the VPDES permit manual, a full three year period of record is necessary to effectively evaluate the possibility of reduced monitoring. Similarly, a complete dataset is more appropriate for use in determining the need for a limitation. As a result, the current semiannual monitoring requirement is retained with this reissuance. The sample type is grab (appropriate for dissolved analysis). This monitoring frequency and sample type should provide enough data for proper assessment.

Nickel Similar to above, the current permit requires dissolved nickel monitoring. At present, the plant has only operated for approximately 1 ½ years since the issuance of the CTO for the expanded plant (July 31, 2007). In order to more closely quantify dissolved effluent concentrations of copper, the modified expansion permit Part I.A. retained the current semiannual monitoring frequency; however, the permittee failed to monitor and report effluent values for the 1st 2008 semiannual period. Therefore, only one effluent value, post expansion, is available for evaluation. In accordance with the VPDES permit manual, a full three year period of record is necessary to effectively evaluate the possibility of reduced monitoring. Similarly, a complete dataset is more appropriate for use in determining the need for a limitation. As a result, the current semiannual monitoring requirement is retained with this reissuance. The sample type is grab (appropriate for dissolved analysis). This monitoring frequency and sample type should provide enough data for proper assessment.

Zinc Similar to above, the current permit requires dissolved zinc monitoring. At present, the plant has only operated for approximately 1 ½ years since the issuance of the CTO for the expanded plant (July 31, 2007). In order to more closely quantify dissolved effluent concentrations of copper, the modified expansion permit Part I.A. retained the current semiannual monitoring frequency; however, the permittee failed to monitor and report effluent values for the 1st 2008 semiannual period. Therefore, only one effluent value, post expansion, is available for evaluation. In accordance with the VPDES permit manual, a full three year period of record is necessary to effectively evaluate the possibility of reduced monitoring. Similarly, a complete dataset is more appropriate for use in determining the need for a limitation. As a result, the current semiannual monitoring requirement is retained with this reissuance. The sample type is grab (appropriate for dissolved analysis). This monitoring frequency and sample type should provide enough data for proper assessment.

Attachment A

Water Quality Standard monitoring is being added with this reissuance to assess the expanded plant effluent. This monitoring is being required to be submitted with the next reissuance application to allow for anticipated influent growth associated with expanded capacity. This data will be used to assess the expanded plant effluent at that time.

Sludge In accordance with Part VI of the VPDES Permit Regulation, this permit contains applicable monitoring and limitations for sludge use, based on the sludge characterization, sludge quantity, pathogen reduction method, and vector attraction reduction. This facility utilizes a land application contractor who was issued and maintains the authorization under a VDH Biosolids Use Regulation (BUR) permit which will be converted to a DEQ VPA permit. All limitations and monitoring conditions of the current permit are being carried forward with this reissuance. As indicated in the facility's application, all sludge processing (quality and quantity) to be completed during the next permit term remains unchanged from the last reissuance.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Chatham STP Permit No.: VA0020524

Receiving Stream: Cherrystone Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	25 mg/L
90% Temperature (Annual) =	23.2 deg C
90% Temperature (Wet season) =	12 deg C
90% Maximum pH =	8.14 SU
10% Maximum pH =	6.9 SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	2.17 MGD
7Q10 (Annual) =	3.66 MGD
30Q10 (Annual) =	4.71 MGD
1Q10 (Wet season) =	6.51 MGD
30Q10 (Wet season)	13.35 MGD
30Q5 =	5.99 MGD
Harmonic Mean =	12.94 MGD
Annual Average =	NA MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	34 mg/L
90% Temp (Annual) =	23 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.3 SU
10% Maximum pH =	6.4 SU
Discharge Flow =	0.685 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	–	–	na	2.7E+03	–	–	na	2.6E+04	–	–	–	–	–	–	–	–	–	–	na	2.6E+04
Acrolein	0	–	–	na	7.8E+02	–	–	na	7.6E+03	–	–	–	–	–	–	–	–	–	–	na	7.6E+03
Acrylonitrile [C]	0	–	–	na	6.6E+00	–	–	na	1.3E+02	–	–	–	–	–	–	–	–	–	–	na	1.3E+02
Aldrin [C]	0	3.0E+00	–	na	1.4E-03	1.3E+01	–	na	2.8E-02	–	–	–	–	–	–	–	–	1.3E+01	–	na	2.8E-02
Ammonia-N (mg/l) (Yearly)	0	1.31E+01	1.61E+00	na	–	5.5E+01	1.3E+01	na	–	–	–	–	–	–	–	–	–	5.5E+01	1.3E+01	na	–
Ammonia-N (mg/l) (High Flow)	0	9.31E+00	2.33E+00	na	–	9.8E+01	4.8E+01	na	–	–	–	–	–	–	–	–	–	9.8E+01	4.8E+01	na	–
Anthracene	0	–	–	na	1.1E+05	–	–	na	1.1E+06	–	–	–	–	–	–	–	–	–	–	na	1.1E+06
Antimony	0	–	–	na	4.3E+03	–	–	na	4.2E+04	–	–	–	–	–	–	–	–	–	–	na	4.2E+04
Arsenic	0	3.4E+02	1.5E+02	na	–	1.4E+03	9.5E+02	na	–	–	–	–	–	–	–	–	–	1.4E+03	9.5E+02	na	–
Barium	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Benzene [C]	0	–	–	na	7.1E+02	–	–	na	1.4E+04	–	–	–	–	–	–	–	–	–	–	na	1.4E+04
Benzidine [C]	0	–	–	na	5.4E-03	–	–	na	1.1E-01	–	–	–	–	–	–	–	–	–	–	na	1.1E-01
Benzo (a) anthracene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Benzo (b) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Benzo (k) fluoranthene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Benzo (a) pyrene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Bis2-Chloroethyl Ether	0	–	–	na	1.4E+01	–	–	na	1.4E+02	–	–	–	–	–	–	–	–	–	–	na	1.4E+02
Bis2-Chloroisopropyl Ether	0	–	–	na	1.7E+05	–	–	na	1.7E+06	–	–	–	–	–	–	–	–	–	–	na	1.7E+06
Bromoform [C]	0	–	–	na	3.6E+03	–	–	na	7.2E+04	–	–	–	–	–	–	–	–	–	–	na	7.2E+04
Butylbenzylphthalate	0	–	–	na	5.2E+03	–	–	na	5.1E+04	–	–	–	–	–	–	–	–	–	–	na	5.1E+04
Cadmium	0	9.0E-01	4.0E-01	na	–	3.8E+00	2.5E+00	na	–	–	–	–	–	–	–	–	–	3.8E+00	2.5E+00	na	–
Carbon Tetrachloride [C]	0	–	–	na	4.4E+01	–	–	na	8.8E+02	–	–	–	–	–	–	–	–	–	–	na	8.8E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	1.0E+01	2.7E-02	na	4.4E-01	–	–	–	–	–	–	–	–	1.0E+01	2.7E-02	na	4.4E-01
Chloride	0	8.6E+05	2.3E+05	na	–	3.6E+06	1.5E+06	na	–	–	–	–	–	–	–	–	–	3.6E+06	1.5E+06	na	–
TRC	0	1.9E+01	1.1E+01	na	–	7.9E+01	7.0E+01	na	–	–	–	–	–	–	–	–	–	7.9E+01	7.0E+01	na	–
Chlorobenzene	0	–	–	na	2.1E+04	–	–	na	2.0E+05	–	–	–	–	–	–	–	–	–	–	na	2.0E+05

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	–	–	na	3.4E+02	–	–	na	6.8E+03	–	–	–	–	–	–	–	–	–	–	na	6.8E+03
Chloroform [C]	0	–	–	na	2.9E+04	–	–	na	5.8E+05	–	–	–	–	–	–	–	–	–	–	na	5.8E+05
2-Chloronaphthalene	0	–	–	na	4.3E+03	–	–	na	4.2E+04	–	–	–	–	–	–	–	–	–	–	na	4.2E+04
2-Chlorophenol	0	–	–	na	4.0E+02	–	–	na	3.9E+03	–	–	–	–	–	–	–	–	–	–	na	3.9E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	–	3.5E-01	2.6E-01	na	–	–	–	–	–	–	–	–	–	3.5E-01	2.6E-01	na	–
Chromium III	0	2.0E+02	2.5E+01	na	–	8.2E+02	1.6E+02	na	–	–	–	–	–	–	–	–	–	8.2E+02	1.6E+02	na	–
Chromium VI	0	1.6E+01	1.1E+01	na	–	6.7E+01	7.0E+01	na	–	–	–	–	–	–	–	–	–	6.7E+01	7.0E+01	na	–
Chromium, Total	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Chrysene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Copper	0	3.9E+00	2.9E+00	na	–	1.6E+01	1.8E+01	na	–	–	–	–	–	–	–	–	–	1.6E+01	1.8E+01	na	–
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	9.2E+01	3.3E+01	na	2.1E+06	–	–	–	–	–	–	–	–	9.2E+01	3.3E+01	na	2.1E+06
DDD [C]	0	–	–	na	8.4E-03	–	–	na	1.7E-01	–	–	–	–	–	–	–	–	–	–	na	1.7E-01
DDE [C]	0	–	–	na	5.9E-03	–	–	na	1.2E-01	–	–	–	–	–	–	–	–	–	–	na	1.2E-01
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	4.6E+00	6.3E-03	na	1.2E-01	–	–	–	–	–	–	–	–	4.6E+00	6.3E-03	na	1.2E-01
Demeton	0	–	1.0E-01	na	–	–	6.3E-01	na	–	–	–	–	–	–	–	–	–	–	6.3E-01	na	–
Dibenz(a,h)anthracene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Dibutyl phthalate	0	–	–	na	1.2E+04	–	–	na	1.2E+05	–	–	–	–	–	–	–	–	–	–	na	1.2E+05
Dichloromethane (Methylene Chloride) [C]	0	–	–	na	1.6E+04	–	–	na	3.2E+05	–	–	–	–	–	–	–	–	–	–	na	3.2E+05
1,2-Dichlorobenzene	0	–	–	na	1.7E+04	–	–	na	1.7E+05	–	–	–	–	–	–	–	–	–	–	na	1.7E+05
1,3-Dichlorobenzene	0	–	–	na	2.6E+03	–	–	na	2.5E+04	–	–	–	–	–	–	–	–	–	–	na	2.5E+04
1,4-Dichlorobenzene	0	–	–	na	2.6E+03	–	–	na	2.5E+04	–	–	–	–	–	–	–	–	–	–	na	2.5E+04
3,3-Dichlorobenzidine[C]	0	–	–	na	7.7E-01	–	–	na	1.5E+01	–	–	–	–	–	–	–	–	–	–	na	1.5E+01
Dichlorobromomethane [C]	0	–	–	na	4.6E+02	–	–	na	9.1E+03	–	–	–	–	–	–	–	–	–	–	na	9.1E+03
1,2-Dichloroethane [C]	0	–	–	na	9.9E+02	–	–	na	2.0E+04	–	–	–	–	–	–	–	–	–	–	na	2.0E+04
1,1-Dichloroethylene	0	–	–	na	1.7E+04	–	–	na	1.7E+05	–	–	–	–	–	–	–	–	–	–	na	1.7E+05
1,2-trans-dichloroethylene	0	–	–	na	1.4E+05	–	–	na	1.4E+06	–	–	–	–	–	–	–	–	–	–	na	1.4E+06
2,4-Dichlorophenol	0	–	–	na	7.9E+02	–	–	na	7.7E+03	–	–	–	–	–	–	–	–	–	–	na	7.7E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
1,2-Dichloropropane[C]	0	–	–	na	3.9E+02	–	–	na	7.8E+03	–	–	–	–	–	–	–	–	–	–	na	7.8E+03
1,3-Dichloropropene	0	–	–	na	1.7E+03	–	–	na	1.7E+04	–	–	–	–	–	–	–	–	–	–	na	1.7E+04
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	1.0E+00	3.6E-01	na	2.8E-02	–	–	–	–	–	–	–	–	1.0E+00	3.6E-01	na	2.8E-02
Diethyl Phthalate	0	–	–	na	1.2E+05	–	–	na	1.2E+06	–	–	–	–	–	–	–	–	–	–	na	1.2E+06
Di-2-Ethylhexyl Phthalate [C]	0	–	–	na	5.9E+01	–	–	na	1.2E+03	–	–	–	–	–	–	–	–	–	–	na	1.2E+03
2,4-Dimethylphenol	0	–	–	na	2.3E+03	–	–	na	2.2E+04	–	–	–	–	–	–	–	–	–	–	na	2.2E+04
Dimethyl Phthalate	0	–	–	na	2.9E+06	–	–	na	2.8E+07	–	–	–	–	–	–	–	–	–	–	na	2.8E+07
Di-n-Butyl Phthalate	0	–	–	na	1.2E+04	–	–	na	1.2E+05	–	–	–	–	–	–	–	–	–	–	na	1.2E+05
2,4 Dinitrophenol	0	–	–	na	1.4E+04	–	–	na	1.4E+05	–	–	–	–	–	–	–	–	–	–	na	1.4E+05
2-Methyl-4,6-Dinitrophenol	0	–	–	na	7.65E+02	–	–	na	7.5E+03	–	–	–	–	–	–	–	–	–	–	na	7.5E+03
2,4-Dinitrotoluene [C]	0	–	–	na	9.1E+01	–	–	na	1.8E+03	–	–	–	–	–	–	–	–	–	–	na	1.8E+03
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	–	–	na	1.2E-06	–	–	na	na	–	–	–	–	–	–	–	–	–	–	na	na
1,2-Diphenylhydrazine[C]	0	–	–	na	5.4E+00	–	–	na	1.1E+02	–	–	–	–	–	–	–	–	–	–	na	1.1E+02
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	9.2E-01	3.6E-01	na	2.3E+03	–	–	–	–	–	–	–	–	9.2E-01	3.6E-01	na	2.3E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	9.2E-01	3.6E-01	na	2.3E+03	–	–	–	–	–	–	–	–	9.2E-01	3.6E-01	na	2.3E+03
Endosulfan Sulfate	0	–	–	na	2.4E+02	–	–	na	2.3E+03	–	–	–	–	–	–	–	–	–	–	na	2.3E+03
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	3.6E-01	2.3E-01	na	7.9E+00	–	–	–	–	–	–	–	–	3.6E-01	2.3E-01	na	7.9E+00
Endrin Aldehyde	0	–	–	na	8.1E-01	–	–	na	7.9E+00	–	–	–	–	–	–	–	–	–	–	na	7.9E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	–	–	na	2.9E+04	–	–	na	2.8E+05	–	–	–	–	–	–	–	–	–	–	na	2.8E+05
Fluoranthene	0	–	–	na	3.7E+02	–	–	na	3.6E+03	–	–	–	–	–	–	–	–	–	–	na	3.6E+03
Fluorene	0	–	–	na	1.4E+04	–	–	na	1.4E+05	–	–	–	–	–	–	–	–	–	–	na	1.4E+05
Foaming Agents	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Guthion	0	–	1.0E-02	na	–	–	6.3E-02	na	–	–	–	–	–	–	–	–	–	–	6.3E-02	na	–
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	2.2E+00	2.4E-02	na	4.2E-02	–	–	–	–	–	–	–	–	2.2E+00	2.4E-02	na	4.2E-02
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	1.1E-03	2.2E+00	2.4E-02	na	2.2E-02	–	–	–	–	–	–	–	–	2.2E+00	2.4E-02	na	2.2E-02
Hexachlorobenzene[C]	0	–	–	na	7.7E-03	–	–	na	1.5E-01	–	–	–	–	–	–	–	–	–	–	na	1.5E-01
Hexachlorobutadiene[C]	0	–	–	na	5.0E+02	–	–	na	9.9E+03	–	–	–	–	–	–	–	–	–	–	na	9.9E+03
Hexachlorocyclohexane Alpha-BHC[C]	0	–	–	na	1.3E-01	–	–	na	2.6E+00	–	–	–	–	–	–	–	–	–	–	na	2.6E+00
Hexachlorocyclohexane Beta-BHC[C]	0	–	–	na	4.6E-01	–	–	na	9.1E+00	–	–	–	–	–	–	–	–	–	–	na	9.1E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	6.3E-01	4.0E+00	–	na	1.3E+01	–	–	–	–	–	–	–	–	4.0E+00	–	na	1.3E+01
Hexachlorocyclopentadiene	0	–	–	na	1.7E+04	–	–	na	1.7E+05	–	–	–	–	–	–	–	–	–	–	na	1.7E+05
Hexachloroethane[C]	0	–	–	na	8.9E+01	–	–	na	1.8E+03	–	–	–	–	–	–	–	–	–	–	na	1.8E+03
Hydrogen Sulfide	0	–	2.0E+00	na	–	–	1.3E+01	na	–	–	–	–	–	–	–	–	–	–	1.3E+01	na	–
Indeno (1,2,3-cd) pyrene [C]	0	–	–	na	4.9E-01	–	–	na	9.7E+00	–	–	–	–	–	–	–	–	–	–	na	9.7E+00
Iron	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Isophorone[C]	0	–	–	na	2.6E+04	–	–	na	5.2E+05	–	–	–	–	–	–	–	–	–	–	na	5.2E+05
Kepone	0	–	0.0E+00	na	–	–	0.0E+00	na	–	–	–	–	–	–	–	–	–	–	0.0E+00	na	–
Lead	0	2.3E+01	2.5E+00	na	–	9.4E+01	1.6E+01	na	–	–	–	–	–	–	–	–	–	9.4E+01	1.6E+01	na	–
Malathion	0	–	1.0E-01	na	–	–	6.3E-01	na	–	–	–	–	–	–	–	–	–	–	6.3E-01	na	–
Manganese	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	5.8E+00	4.9E+00	na	5.0E-01	–	–	–	–	–	–	–	–	5.8E+00	4.9E+00	na	5.0E-01
Methyl Bromide	0	–	–	na	4.0E+03	–	–	na	3.9E+04	–	–	–	–	–	–	–	–	–	–	na	3.9E+04
Methoxychlor	0	–	3.0E-02	na	–	–	1.9E-01	na	–	–	–	–	–	–	–	–	–	–	1.9E-01	na	–
Mirex	0	–	0.0E+00	na	–	–	0.0E+00	na	–	–	–	–	–	–	–	–	–	–	0.0E+00	na	–
Monochlorobenzene	0	–	–	na	2.1E+04	–	–	na	2.0E+05	–	–	–	–	–	–	–	–	–	–	na	2.0E+05
Nickel	0	6.1E+01	6.6E+00	na	4.6E+03	2.5E+02	4.2E+01	na	4.5E+04	–	–	–	–	–	–	–	–	2.5E+02	4.2E+01	na	4.5E+04
Nitrate (as N)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Nitrobenzene	0	–	–	na	1.9E+03	–	–	na	1.9E+04	–	–	–	–	–	–	–	–	–	–	na	1.9E+04
N-Nitrosodimethylamine[C]	0	–	–	na	8.1E+01	–	–	na	1.6E+03	–	–	–	–	–	–	–	–	–	–	na	1.6E+03
N-Nitrosodiphenylamine[C]	0	–	–	na	1.6E+02	–	–	na	3.2E+03	–	–	–	–	–	–	–	–	–	–	na	3.2E+03
N-Nitrosodi-n-propylamine[C]	0	–	–	na	1.4E+01	–	–	na	2.8E+02	–	–	–	–	–	–	–	–	–	–	na	2.8E+02
Parathion	0	6.5E-02	1.3E-02	na	–	2.7E-01	8.2E-02	na	–	–	–	–	–	–	–	–	–	2.7E-01	8.2E-02	na	–
PCB-1016	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1221	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1232	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1242	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1248	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1254	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB-1260	0	–	1.4E-02	na	–	–	8.9E-02	na	–	–	–	–	–	–	–	–	–	–	8.9E-02	na	–
PCB Total[C]	0	–	–	na	1.7E-03	–	–	na	3.4E-02	–	–	–	–	–	–	–	–	–	–	na	3.4E-02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol [C]	0	6.6E+00	5.3E+00	na	8.2E+01	2.7E+01	3.4E+01	na	1.6E+03	–	–	–	–	–	–	–	–	2.7E+01	3.4E+01	na	1.6E+03
Phenol	0	–	–	na	4.6E+06	–	–	na	4.5E+07	–	–	–	–	–	–	–	–	–	–	na	4.5E+07
Pyrene	0	–	–	na	1.1E+04	–	–	na	1.1E+05	–	–	–	–	–	–	–	–	–	–	na	1.1E+05
Radionuclides (pCi/l except Beta/Photon)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Gross Alpha Activity	0	–	–	na	1.5E+01	–	–	na	1.5E+02	–	–	–	–	–	–	–	–	–	–	na	1.5E+02
Beta and Photon Activity (mrem/yr)	0	–	–	na	4.0E+00	–	–	na	3.9E+01	–	–	–	–	–	–	–	–	–	–	na	3.9E+01
Strontium-90	0	–	–	na	8.0E+00	–	–	na	7.8E+01	–	–	–	–	–	–	–	–	–	–	na	7.8E+01
Tritium	0	–	–	na	2.0E+04	–	–	na	1.9E+05	–	–	–	–	–	–	–	–	–	–	na	1.9E+05
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	8.3E+01	3.2E+01	na	1.1E+05	–	–	–	–	–	–	–	–	8.3E+01	3.2E+01	na	1.1E+05
Silver	0	3.7E-01	–	na	–	1.5E+00	–	na	–	–	–	–	–	–	–	–	–	1.5E+00	–	na	–
Sulfate	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
1,1,2,2-Tetrachloroethane [C]	0	–	–	na	1.1E+02	–	–	na	2.2E+03	–	–	–	–	–	–	–	–	–	–	na	2.2E+03
Tetrachloroethylene [C]	0	–	–	na	8.9E+01	–	–	na	1.8E+03	–	–	–	–	–	–	–	–	–	–	na	1.8E+03
Thallium	0	–	–	na	6.3E+00	–	–	na	6.1E+01	–	–	–	–	–	–	–	–	–	–	na	6.1E+01
Toluene	0	–	–	na	2.0E+05	–	–	na	1.9E+06	–	–	–	–	–	–	–	–	–	–	na	1.9E+06
Total dissolved solids	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	3.0E+00	1.3E-03	na	1.5E-01	–	–	–	–	–	–	–	–	3.0E+00	1.3E-03	na	1.5E-01
Tributyltin	0	4.6E-01	6.3E-02	na	–	1.9E+00	4.0E-01	na	–	–	–	–	–	–	–	–	–	1.9E+00	4.0E-01	na	–
1,2,4-Trichlorobenzene	0	–	–	na	9.4E+02	–	–	na	9.2E+03	–	–	–	–	–	–	–	–	–	–	na	9.2E+03
1,1,2-Trichloroethane [C]	0	–	–	na	4.2E+02	–	–	na	8.4E+03	–	–	–	–	–	–	–	–	–	–	na	8.4E+03
Trichloroethylene [C]	0	–	–	na	8.1E+02	–	–	na	1.6E+04	–	–	–	–	–	–	–	–	–	–	na	1.6E+04
2,4,6-Trichlorophenol [C]	0	–	–	na	6.5E+01	–	–	na	1.3E+03	–	–	–	–	–	–	–	–	–	–	na	1.3E+03
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	–	–	na	–	–	–	na	–	–	–	–	–	–	–	–	–	–	–	na	–
Vinyl Chloride [C]	0	–	–	na	6.1E+01	–	–	na	1.2E+03	–	–	–	–	–	–	–	–	–	–	na	1.2E+03
Zinc	0	3.9E+01	3.8E+01	na	6.9E+04	1.6E+02	2.4E+02	na	6.7E+05	–	–	–	–	–	–	–	–	1.6E+02	2.4E+02	na	6.7E+05

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

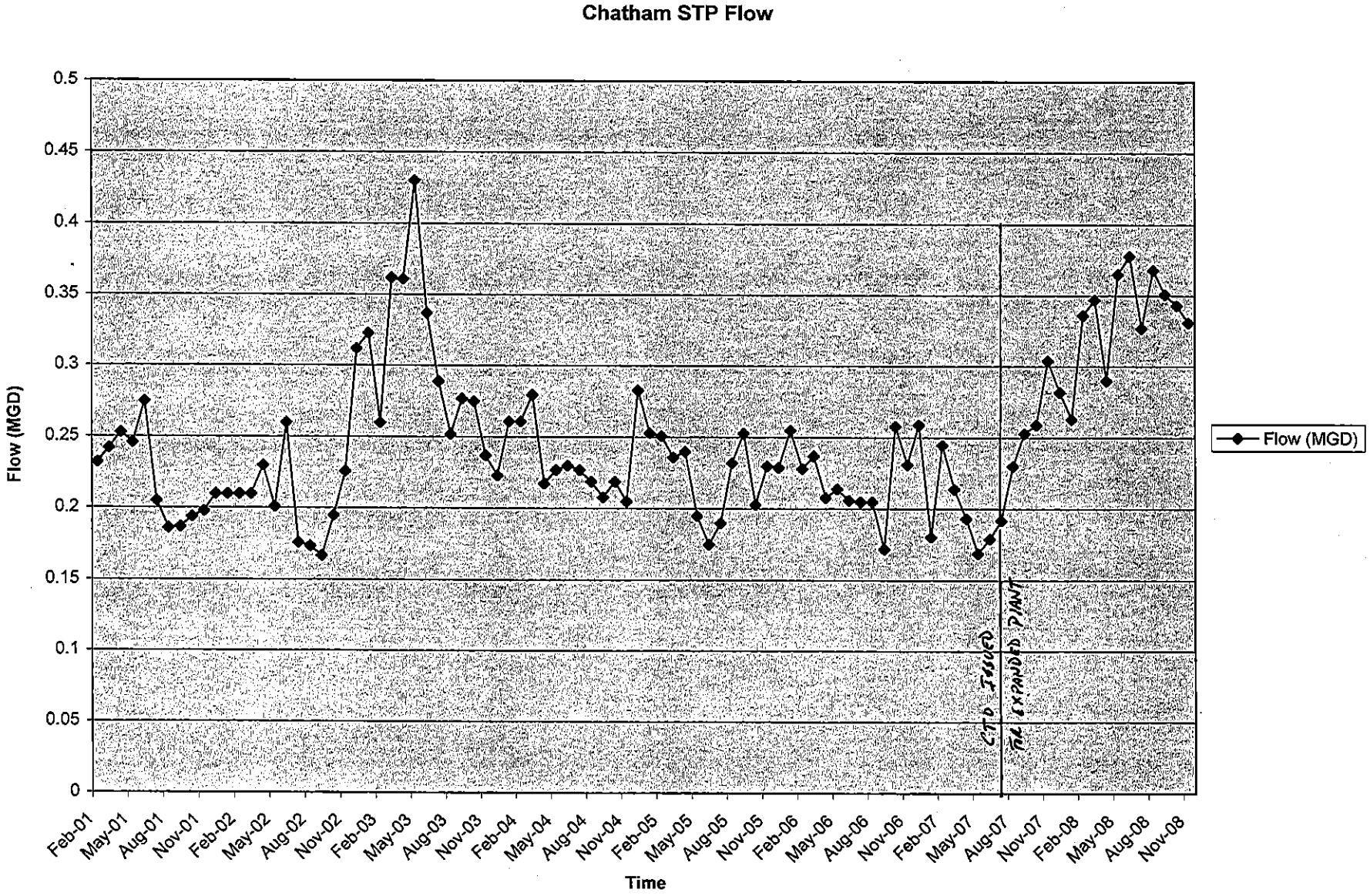
Metal	Target Value (SSTV)
Antimony	4.2E+04
Arsenic	5.7E+02
Barium	na
Cadmium	1.5E+00
Chromium III	9.5E+01
Chromium VI	2.7E+01
Copper	6.6E+00
Iron	na
Lead	9.4E+00
Manganese	na
Mercury	5.0E-01
Nickel	2.5E+01
Selenium	1.9E+01
Silver	6.1E-01
Zinc	6.5E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Town of Chatham Sewage Treatment Plant
Outfall 001 Effluent Flow

Date	Quanity (MGD)	
	Average	Maximum
10-Jan-2003	0.323	0.652
10-Feb-2003	0.26	0.37
10-Mar-2003	0.362	0.916
10-Apr-2003	0.361	0.977
10-May-2003	0.43	1.138
10-Jun-2003	0.337	0.591
10-Jul-2003	0.289	0.548
10-Aug-2003	0.252	0.422
10-Sep-2003	0.277	0.507
10-Oct-2003	0.275	0.435
10-Nov-2003	0.237	0.429
10-Dec-2003	0.223	0.379
10-Jan-2004	0.261	0.532
10-Feb-2004	0.261	0.614
10-Mar-2004	0.2797	0.689
10-Apr-2004	0.2174	0.517
10-May-2004	0.227	0.433
10-Jun-2004	0.23	0.408
10-Jul-2004	0.227	0.383
10-Aug-2004	0.219	0.493
10-Sep-2004	0.208	0.671
10-Oct-2004	0.219	0.485
10-Nov-2004	0.205	0.305
10-Dec-2004	0.283	0.624
10-Jan-2005	0.253	0.469
10-Feb-2005	0.251	0.736
10-Mar-2005	0.236	0.322
10-Apr-2005	0.24	0.357
10-May-2005	0.195	0.289
10-Jun-2005	0.175	0.265
10-Jul-2005	0.19	0.294
10-Aug-2005	0.232	0.389
10-Sep-2005	0.253	0.426
10-Oct-2005	0.203	0.331
10-Nov-2005	0.23	0.524
10-Dec-2005	0.229	0.545
10-Jan-2006	0.255	0.478
10-Feb-2006	0.228	0.42
10-Mar-2006	0.237	0.373
10-Apr-2006	0.208	0.29
10-May-2006	0.214	0.33
10-Jun-2006	0.206	0.278
10-Jul-2006	0.205	0.324
10-Aug-2006	0.205	0.318

Date	Quanity (MGD)		
	Average	Maximum	
10-Sep-2006	0.172	0.335	
10-Oct-2006	0.258	0.54	
10-Nov-2006	0.231	0.443	
10-Dec-2006	0.259	0.798	
10-Jan-2007	0.1803	0.293	
10-Feb-2007	0.2448	0.757	
10-Mar-2007	0.214	0.456	
10-Apr-2007	0.1933	0.448	
10-May-2007	0.1689	0.3162	
10-Jun-2007	0.179	0.214	
10-Jul-2007	0.1919	0.3547	CTO issued for Expanded Plant
10-Aug-2007	0.23	0.469	
10-Sep-2007	0.253	0.312	
10-Oct-2007	0.259	0.404	
10-Nov-2007	0.304	0.792	
10-Dec-2007	0.282	0.437	
10-Jan-2008	0.263	0.387	
10-Feb-2008	0.336	0.494	
10-Mar-2008	0.347	0.598	
10-Apr-2008	0.29	0.403	
10-May-2008	0.365	0.604	
10-Jun-2008	0.378	0.853	
10-Jul-2008	0.327	0.455	
10-Aug-2008	0.368	0.484	
10-Sep-2008	0.351	0.948	
10-Oct-2008	0.343	0.55	
10-Nov-2008	0.331	0.46	


Chatham STP Flow
Flow (MGD)
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Feb-01
May-01
Aug-01
Nov-01
Feb-02
May-02
Aug-02
Nov-02
Feb-03
May-03
Aug-03
Nov-03
Feb-04
May-04
Aug-04
Nov-04
Feb-05
May-05
Aug-05
Nov-05
Feb-06
May-06
Aug-06
Nov-06
Feb-07
May-07
Aug-07
Nov-07
Feb-08
May-08
Aug-08
Nov-08
Time
CTO Issued
Flow (MGD)

Town of Chatham STP
Effluent pH Data (SU) - *POST UPGRADE*

Date	Effluent pH	
	Minimum	Maximum
10-Aug-2007	6.55	7.01
10-Sep-2007	6.49	7.28
10-Oct-2007	6.4	6.93
10-Nov-2007	6.42	6.94
10-Dec-2007	6.68	6.97
10-Jan-2008	6.85	7.16
10-Feb-2008	6.43	7.26
10-Mar-2008	6.84	7.08
10-Apr-2008	6.62	7.3
10-May-2008	6.58	7.43
10-Jun-2008	6.39	7.11
10-Jul-2008	6.68	7.27
10-Aug-2008	6.39	7.2
10-Sep-2008	6.04	7.28
10-Oct-2008	6.6	7.3
10-Nov-2008	6.6	7.3

90th % =	7.3
10th % =	6.4

Town of Chatham Sewage Treatment Plant
Outfall 001 Effluent TSS - *POST UPGRADE*

Date	Quanity (Kg/day)		Concentration (mg/l)	
	Average	Maximum	Average	Maximum
10-Aug-2007	3.46	8.8	4.04	12.75
10-Sep-2007	3.36	9.15	3.59	9.55
10-Oct-2007	3.54	5.64	3.99	6.03
10-Nov-2007	4.36	7.92	3.99	6.7
10-Dec-2007	4.88	9.27	4.41	7.5
10-Jan-2008	5.9	10.16	6.05	9.95
10-Feb-2008	8.43	9.03	6.4	7.58
10-Mar-2008	7.93	9.77	6.15	8.53
10-Apr-2008	5.4	6.97	6.14	8.69
10-May-2008	7.65	17.52	5.57	7.82
10-Jun-2008	11.08	15.17	7.39	8.57
10-Jul-2008	6.06	7.3	4.33	5.05
10-Aug-2008	5.06	7.21	4.12	5.33
10-Sep-2008	7.62	9.37	6.37	8.2
10-Oct-2008	5.9	10.9	4.7	8.2
10-Nov-2008	10	34.2	7.1	21.3

Town of Chatham STP
Effluent $cBOD_5$ Data - *POST UPGRADE*

Date	$cBOD_5$ (kg/Day)		$cBOD_5$ (mg/l)	
	Monthly Avg.	Weekly Avg.	Monthly Avg.	Weekly Avg.
10-Sep-2007	3.08	5.43	3.3	5.53
10-Oct-2007	2.6	3.57	2.54	3.79
10-Nov-2007	3.28	4.59	3.01	4.4
10-Dec-2007	3.26	4.77	3.07	4.39
10-Jan-2008	4.46	10.37	4.59	10.88
10-Feb-2008	6.91	13.24	6.08	9.31
10-Mar-2008	11.81	19.34	8.4	12.09
10-Apr-2008	4.48	4.82	4.59	5.46
10-May-2008	9.02	17.31	6.62	12.04
10-Jun-2008	5.96	7.65	3.93	5.88
10-Jul-2008	3.26	3.72	2.53	2.99
10-Aug-2008	5.01	7.52	3.6	6.1
10-Sep-2008	2.39	2.59	2.23	3.56
10-Oct-2008	2.8	4.2	2.3	3.1
10-Nov-2008	3.7	6.6	2.8	5

Town of Chatham STP
Effluent DO - *POST UPGRADE*

Date	Minimum DO (mg/l)
10-Aug-2007	7.11
10-Sep-2007	7.05
10-Oct-2007	7.14
10-Nov-2007	7.51
10-Dec-2007	7.43
10-Jan-2008	8.01
10-Feb-2008	9.11
10-Mar-2008	7.31
10-Apr-2008	7.96
10-May-2008	8.16
10-Jun-2008	7.64
10-Jul-2008	7.35
10-Aug-2008	7.01
10-Sep-2008	7.1
10-Oct-2008	7.4
10-Nov-2008	7.8

Permit Limit (minimum) = 7.0 mg/l

Town of Chatham STP
Effluent Ammonia - Prior to UPGRADE

Date	Ammonia (mg/l)	
	Average	Maximum
10-Sep-2001	1	1
10-Oct-2001	<1.0	<1.0
10-Nov-2001	<1.0	<1.0
10-Dec-2001	<1.0	<1.0
10-Jan-2002	<.01	<.01
10-Feb-2002	1.2	1.2
10-Mar-2002	1.3	1.3
10-Apr-2002	0.2	0.2
10-May-2002	14	14
10-Jun-2002	1.9	1.9
10-Jul-2002	4.5	4.5
10-Aug-2002	0.3	0.3
10-Sep-2002	0.2	0.2
10-Oct-2002	<QL	<QL
10-Nov-2002	9.4	9.4
10-Dec-2002	4.6	4.6
10-Jan-2003	1.3	1.3
10-Feb-2003	0.1	0.1
10-Mar-2003	0.4	0.4
10-Apr-2003	0.3	0.3
10-May-2003	<QL	<QL
10-Jun-2003	<QL	<QL
10-Jul-2003	<QL	<QL
10-Aug-2003	0.2	0.2
10-Sep-2003	<QL	<QL
10-Oct-2003	<QL	<QL
10-Nov-2003	<QL	<QL
10-Dec-2003	0.2	0.2
10-Jan-2004	1.58	1.58
10-Feb-2004	<QL	<QL
10-Mar-2004	0.4	0.4
10-Apr-2004	0.17	0.17
10-May-2004	<QL	<QL
10-Jun-2004	0.13	0.13
10-Jul-2004	<QL	<QL
10-Aug-2004	0.21	0.21
10-Sep-2004	<QL	<QL
10-Oct-2004	0.18	0.18
10-Nov-2004	<QL	<QL
10-Dec-2004	<QL	<QL
10-Jan-2005	<QL	<QL
10-Feb-2005	3.85	3.85
10-Mar-2005	<QL	<QL
10-Apr-2005	<QL	<QL
10-May-2005	<QL	<QL
10-Jun-2005	<QL	<QL
10-Jul-2005	<QL	<QL
10-Aug-2005	<QL	<QL
10-Sep-2005	<QL	<QL
10-Oct-2005	<QL	<QL
10-Nov-2005	5.4	5.4
10-Dec-2005	14.4	14.4
10-Jan-2006	0.42	0.42
10-Feb-2006	0.11	0.11
10-Mar-2006	0.39	0.39
10-Apr-2006	0.13	0.13
10-May-2006	0.12	0.12
10-Jun-2006	<QL	<QL
10-Jul-2006	<QL	<QL
10-Aug-2006	0.24	0.24
10-Sep-2006	<QL	<QL
10-Oct-2006	<QL	<QL
10-Nov-2006	<QL	<QL
10-Dec-2006	<QL	<QL
10-Jan-2007	6.99	6.99
10-Feb-2007	2.56	2.56
10-Mar-2007	2.16	2.16
10-Apr-2007	15.2	15.2
10-May-2007	0.61	0.61
10-Jun-2007	0.52	0.52
10-Jul-2007	<QL	<QL
10-Aug-2007	0.41	0.41

Town of Chatham STP
Effluent TKN - *POST UPGRADE*

Date	TKN (mg/l)		TKN (Kg/d)	
	Average	Maximum	Average	Maximum
10-Sep-2007	2.44	3.97	2.26	3.46
10-Oct-2007	8.57	24	8.07	20.09
10-Nov-2007	2.74	10.3	3.05	12.17
10-Dec-2007	2.98	5.77	3.02	7.21
10-Jan-2008	5.07	8.02	4.79	8.26
10-Feb-2008	2.36	5.12	2.91	5.58
10-Mar-2008	3.14	6.54	3.84	7.64
10-Apr-2008	1.34	3.23	1.26	2.51
10-May-2008	2.26	3.6	2.86	4.84
10-Jun-2008	2.68	6.8	0.99	8.19
10-Jul-2008	2.42	6.6	3.12	7.65
10-Aug-2008	2.01	2.9	2.81	4.99
10-Sep-2008	2.64	7.5	3.31	9.85
10-Oct-2008	2.33	6.3	3.08	7.98
10-Nov-2008	1.61	2.8	2.12	4.35
Permit Limits =	38.9	58.3	15	22.5

Town of Chatham STP
Effluent *E. coli* - *POST UPGRADE*

Date	E. coli (n/100ml) Geometric Mean
10-Mar-2007	155.9
10-Apr-2007	3.83
10-May-2007	<QL
10-Jun-2007	2
10-Jul-2007	3
10-Aug-2007	7.22
10-Sep-2007	3
10-Oct-2007	2
10-Nov-2007	2
10-Dec-2007	2.03
10-Jan-2008	3.25
10-Feb-2008	18
10-Mar-2008	5
10-Apr-2008	3
10-May-2008	9
10-Jun-2008	8
10-Jul-2008	8
10-Aug-2008	4
10-Sep-2008	7
10-Oct-2008	6
10-Nov-2008	7

Permit limit = Geometric mean $\leq$ 126 n/100 ml

= exceeds permit limit

Town of Chatham STP
Effluent Dissolved Metals - PRE & POST EXPANSION

Date	Dissolved Cu (µg/l)		Dissolved Ni (µg/l)		
	Average	Maximum	Average	Maximum	
07-Jul-2004	<5	<5	<5	<5	
02-Dec-2004	<5	<5	<5	<5	
08-Jun-2005	<5	<5	<5	<5	
10-Nov-2005	<5	<5	<5	<5	
10-May-2006	<5	<5	<5	<5	
08-Nov-2006	<5	<5	<5	<5	
06-Jun-2007	<5	<5	<5	<5	CTO For Expanded Plant Issued
10-Jan-2008	9	9	<5	<5	
10-Jul-2008	NR	NR	NR	NR	

Date	Dissolved Zn (µg/l)		
	Average	Maximum	
10-Nov-2005	13.2	13.2	
10-May-2006	46.1	46.1	
08-Nov-2006	32.6	32.6	
06-Jun-2007	65.9	65.9	CTO For Expanded Plant Issued
10-Jan-2008	72	72	
10-Jul-2008	NR	NR	

NR = Facility did not monitor or report as required

Town of Chatham Sewage Treatment Plant
Sludge Values (mg/kg)* unless otherwise stated

Date	Sludge Parameters	Average	Maximum
06-Feb-2003	ARSENIC, SLUDGE	<QL	<QL
02-Dec-2004	ARSENIC, SLUDGE	4.44	4.44
08-Nov-2005	ARSENIC, SLUDGE	13.6	13.6
11-Jan-2006	ARSENIC, SLUDGE	4.7	4.7
09-Jan-2007	ARSENIC, SLUDGE	21.7	21.7
06-Feb-2003	MOLYBDENUM, SLUDGE	0.22	0.22
08-Nov-2005	MOLYBDENUM, SLUDGE	<5	<5
11-Jan-2006	MOLYBDENUM, SLUDGE	7.8	7.8
09-Jan-2007	MOLYBDENUM, SLUDGE	<21.7	<21.7
06-Feb-2003	ZINC, SLUDGE	7.48	7.48
02-Dec-2004	ZINC, SLUDGE	638	638
08-Nov-2005	ZINC, SLUDGE	952	952
11-Jan-2006	ZINC, SLUDGE	533	533
09-Jan-2007	ZINC, SLUDGE	580	580
06-Feb-2003	LEAD, SLUDGE	0.393	0.393
02-Dec-2004	LEAD, SLUDGE	61.5	61.5
08-Nov-2005	LEAD, SLUDGE	22.6	22.6
11-Jan-2006	LEAD, SLUDGE	44.6	44.6
09-Jan-2007	LEAD, SLUDGE	44.4	44.4
06-Feb-2003	NICKEL, SLUDGE	0.28	0.28
02-Dec-2004	NICKEL, SLUDGE	17.3	17.3
08-Nov-2005	NICKEL, SLUDGE	213	213
11-Jan-2006	NICKEL, SLUDGE	14.6	14.6
09-Jan-2007	NICKEL, SLUDGE	<21.7	<21.7
06-Feb-2003	MERCURY, SLUDGE	0.0054	0.0054
02-Dec-2004	MERCURY, SLUDGE	36	36
08-Nov-2005	MERCURY, SLUDGE	38.6	38.6
11-Jan-2006	MERCURY, SLUDGE	1.2	1.2
09-Jan-2007	MERCURY, SLUDGE	<0.2	<0.2
06-Feb-2003	COPPER, SLUDGE	3.55	3.55
02-Dec-2004	COPPER, SLUDGE	267	267
08-Nov-2005	COPPER, SLUDGE	625	625
11-Jan-2006	COPPER, SLUDGE	225	225
09-Jan-2007	COPPER, SLUDGE	230	230
06-Feb-2003	CADMIUM, SLUDGE	0.053	0.053
02-Dec-2004	CADMIUM, SLUDGE	2.8	2.8
08-Nov-2005	CADMIUM, SLUDGE	14.9	14.9
11-Jan-2006	CADMIUM, SLUDGE	<0.33	<0.33
09-Jan-2007	CADMIUM, SLUDGE	<4.3	<4.3
06-Feb-2003	SELENIUM, SLUDGE	0.003	0.003
02-Dec-2004	SELENIUM, SLUDGE	2.27	2.27
08-Nov-2005	SELENIUM, SLUDGE	11.6	11.6
11-Jan-2006	SELENIUM, SLUDGE	1.8	1.8
09-Jan-2007	SELENIUM, SLUDGE	<21.7	<21.7

Town of Chatham Sewage Treatment Plant
Sludge Values (mg/kg)* unless otherwise stated

Date	Sludge Parameters	Average	
11-Jan-2006	ANNUAL SLUDGE PRODUCTION TOTAL	88.33	Dry metric Tons
09-Jan-2007	ANNUAL SLUDGE PRODUCTION TOTAL	51.62	Dry metric Tons
11-Jan-2006	ANNUAL AMT SLUDGE LAND APPLIED	0	Dry metric Tons
09-Jan-2007	ANNUAL AMT SLUDGE LAND APPLIED	102.17	Dry metric Tons
06-Feb-2003	SOLIDS, TOTAL, SLUDGE AS PERCENT	2	
02-Dec-2004	SOLIDS, TOTAL, SLUDGE AS PERCENT	2.6	
08-Nov-2005	SOLIDS, TOTAL, SLUDGE AS PERCENT	2.9	
11-Jan-2006	SOLIDS, TOTAL, SLUDGE AS PERCENT	3	
09-Jan-2007	SOLIDS, TOTAL, SLUDGE AS PERCENT	2.3	

[redacted] = exceeds limitation

Spill Compliance Records

Year	Month	Item	Param Name	Requirement	Reported	Date Determined	WL/NOV
2004	AUG	UPD to state waters on August 12, 2004				23-Feb-2005	
2008	MAY	Unauthorized discharge occurred 5-8-08 due to heavy rains; 3,000 gallons; reached				19-Jun-2008	
2008	MAY	Overflow not reported on DMR				24-Jun-2008	
2008	OCT	UPD of 10-14-08 not reported within required 24 hours				21-Nov-2008	W2008-12-L-1007
2008	OCT	Unauthorized discharge 10-14-08; did not reach state waters				21-Nov-2008	
2008	OCT	Overflow of 10-14-08 and 10-16-08 not reported on DMR				21-Nov-2008	W2008-12-L-1007
2008	OCT	Unauthorized discharge 10-16-08; estimated 500 gallons; did not reach state waters				04-Dec-2008	W2008-12-L-1007

Permit Related Compliance Record - Chatham STP Outfall 001

Year	Month	Item	Param Name	Requirement	Reported	Date Determined	WL/NOV
2004	FEB	Wite-Out used on DMR				22-Mar-2004	
2005	MAR	Wite-Out used on DMR				26-Apr-2005	
2005	APR	Wite-out on DMR				25-May-2005	
2006	NOV	CONCMIN	DO	7.0	6.33	27-Dec-2006	
2007	FEB	CONCAVG	E.COLI	126	155.9	27-Mar-2007	
2007	SEP	CONCMAX	TKN (N-KJEL)	22.5	24.0	24-Oct-2007	
2007	NOV	Incomplete DMR (less than 25% data missing)				20-Dec-2007	
2007	NOV	CONCAVG-- UNREPORTED	E.COLI	126	X	20-Dec-2007	
2008	JUN	DMR due 07/10/2008 missing DMR.				24-Jul-2008	
2008	SEP	Monitoring period not entered				18-Dec-2008	
2005	OCT	CONCAVG	MERCURY, SLUDGE	17	38.6	28-Nov-2005	

ATTACHMENT 8

SPECIAL CONDITIONS RATIONALE

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE

Name of Condition:

B. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Sludge Reopener

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-220 C., and 40 CFR 122.44(c)(4), which note that all permits for domestic sewage treatment plants (including sludge-only facilities) include any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the Clean Water Act.

b. Water Quality Criteria Reopener

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-220 D., Water Quality Standards and State Requirements, requires that the permit include limits to achieve water quality standards, including the narrative criteria. 40 CFR Part 131, Water Quality Standards, requires the state to adopt water quality criteria to protect designated water uses (subpart 131.11), and review, modify and adopt water quality standards periodically (subpart 131.20). Section 302 of the Clean Water Act authorizes effluent limitations to be established which will contribute to the attainment or maintenance of the water quality.

c. Total Maximum Daily Load (TMDL)] Reopener

Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired in order that they achieve the applicable water quality standards. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(l) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other waste load allocation prepared under section 303 of the Act.

2. Licensed Wastewater Operator Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 D., requires the permittee to employ or contract at least one wastewater works operator who holds a current wastewater license for the permitted facility. The Code of Virginia 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. In addition, the Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.), recommends a manning and classification schedule for domestic wastewater treatment plant operators, based on plant capacity and specific treatment types.

3. Reliability Class

Rationale: The Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.) specify reliability classes for all domestic sewage facilities.

4. Certificate to Construct (CTC) and Certificate to Operate (CTO) Requirements

Rationale: The Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.) specify the requirement for the review and approval of plans and specifications (CTC) and the subsequent issuance of a CTO prior to operating any domestic sewage facilities.

5. Operations & Maintenance (O&M) Manual Requirements

Rationale: Required by the State Water Control Law, Section 62.1-44.19 and the VPDES Permit Regulation, 9 VAC 25-31-190 E. The State Water Control Law, Section 62.1-44.21, allows requests for any information necessary to determine the effect of the discharge on state waters. Section 401 of the Clean Water Act requires the permittee to provide opportunity for the state to review the proposed operations of the facility. In addition, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) in order to achieve compliance with the permit (includes laboratory controls and QA/QC).

6. 95% Design Capacity Notification

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.2., for all POTWs and PVOTWs in order to insure continued compliance with the terms of the permit.

7. Compliance Reporting Under Part I.A.

Rationale: Authorized by the VPDES Permit Regulation, 9 VAC 25-31-190 J.4. and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

8. Water Quality Monitoring

Rationale: The State Water Control Law, Section 62.1-44.21, authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To insure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of the permit.

9. Materials Handling and Storage

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-50 A., prohibits the discharge of any wastes into State waters unless authorized by permit. The State Water Control Law, Sec. 62.1-44.16 and 17 authorizes the Board to regulate the discharge of industrial or other wastes. Section 301 of the Clean Water Act prohibits the discharge of any pollutant unless it complies with specific sections of the Act.

10. Indirect Dischargers

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.1 and 40 CFR 122.42(b), for POTWs and PVOTWs which receive waste from someone other than the owner of the treatment works. DEQ must be notified of the introduction of new pollutants to the treatment system, from an indirect discharger, whether as increased volume or a change in the character of the pollutants.

11. Facility Closure Plan

Rationale: This condition is required in the event that some or all of the operations at the facility cease. The system (or part of the system) must be properly closed out in accordance with regulatory requirements.

12. Permit Application Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-100 D. and 40 CFR 122.21 (d)(1) require a new application at least 180 days prior to expiration of the existing permit. In addition, the VPDES Permit Regulation, 9 VAC 25-31-100 E.1. and 40 CFR 122.21 (e)(1) note that a permit shall not be issued before receiving a complete application.

C. SIGNIFICANT DISCHARGE WASTE SURVEY

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-10 et seq., Part VII, and 40 CFR Part 403 establish the legal requirements for State, local government and industry to implement National Pretreatment Standards. The Pretreatment Standards are implemented to prevent POTW plant pass through, interference, violation of water quality standards or contamination of sewage sludge. The regulation requires POTWs with a total design flow greater than 5 MGD with significant or categorical industrial input to establish a Pretreatment Program. The regulation also may apply to POTWs with design flows less than 5 MGD if circumstances warrant control of industrial discharges.

This survey is designed to determine if there are any significant or categorical industrial users discharging into the POTW' collection system. Based on the survey results, a determination can be made as to the need for establishing a pretreatment program at the POTW.

D. SEWAGE SLUDGE USE AND DISPOSAL, LIMITATIONS AND MONITORING REQUIREMENTS

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-100 P., 220 B.2. and 420 through 720, and 40 CFR 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal. The VPDES sewage sludge permit application form and its attachments constitute the sludge management plan and will be considered for approval with the VPDES permit. Technical requirements may be derived from the Department of Health's Biosolids Use Regulation, 12 VAC 5-585-10 et seq. and sections 330 and 340 of that regulation specify the general purpose and control requirements for an O&M manual in order to facilitate proper O&M of the facilities to meet the requirements of the regulation.

Part II CONDITIONS APPLICABLE TO ALL VPDES PERMITS

The VPDES Permit Regulation, 9 VAC 25-31-190, and 40 CFR 122, require all VPDES permits to contain or specifically cite the conditions listed.

ATTACHMENT 9

RECEIVING WATERS INFO./
TIER DETERMINATION/STORET DATA

Planning Statement for VPDES Permit Application Processing DEQ-SCRO

VPDES	OwnerName	Facility	County
VA0020524	Town of Chatham	Town of Chatham STP	Pittsylvania

Outfall #: 001

River Basin: Roanoke River

Receiving Stream: Cherrystone Creek

Subbasin: Roanoke River

Watershed Code: L66R

River Mile: 2.49

	MGD		MGD
1Q10	2.17	**HF 1Q10**	6.51
7Q10	3.66	**HF7Q10**	10.88
30Q5	5.99	**HF30Q10**	13.35
30Q10	4.71	**HM**	12.94

Modeling Notes

cBOD5 - 25mg/L
TKN - 15 mg/L
DO - 7mg/L

WQMP Name 9 VAC 25-720-80

Statement Modeling resultswill be included in current amendment to WQMP

TMDL ID VAC-L66R-01/00381

Impairment Cause Fecal Coliform

TMDL Due Date 2008

Completed TMDL Information

Banister River Watershed TMDL

TMDL Approval Dates EPA - 11/4/07 & SWCB 7/31/08

Amanda B. Gray

Amanda B. Gray, Water Planning Engineer

3/7/08

Date

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Town of Chatham STP - #VA0020524

TO: Kirk Batsel

FROM: Amanda Gray dgray

DATE: March 7, 2008

COPIES: File

I have reviewed the flow frequency request submitted for the Town of Chatham STP. As there has been no change to the location of the discharge, the frequencies calculated in July 2005 remain in effect. If you have any questions or need additional flow data for this permit development, please let me know.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination & Stream Sanitation Analysis
Cherrystone Creek – Town of Chatham VA#0020524

TO: Kirk Batsel

FROM: Amanda Gray

DATE: July 25, 2005

COPIES: File

A complete request for a flow frequency determination and stream sanitation analysis for Cherrystone Creek – Town of Chatham STP was received on June 30, 2005. The facility is currently permitted at 0.45 MGD with limitations equivalent to secondary treatment. The proposed expansion will increase the design flow to 0.685 MGD.

Amanda Gray, Kirk Batsel and Kyle Winter performed a site visit on July 13, 2005 and observed current conditions and the current outfall location. A flow frequency analysis was completed to determine the 1Q10, 7Q10, 30Q5, 30Q10, HF1Q10, HF7Q10, HF30Q10 and Harmonic Mean at the discharge point. A 7Q10 of 3.66 MGD was calculated for use in the model at the discharge point.

The first model segment is approximately 2.34 miles and the upstream and downstream elevations are 570 ft. and 550 ft. respectively. The confluence of Cherrystone Creek and Little Cherrystone Creek is the start of the second model segment where the upstream and downstream elevations are 550 ft. The second segment is 0.15 miles in length. Both segments are considered to be Tier 1 waters and therefore are not subject to antidegradation requirements.

The receiving stream was modeled using DEQ's Regional 4.0 model. Several iterations of the model were run using a 7Q10 of 3.66 MGD and a default temperature value of 28°C. The following limits are recommended for the discharge: $cBOD_5$ of 25 mg/L, a TKN value of 15 mg/L and a minimum dissolved oxygen limit of 7 mg/L. The proposed limitations are considered water quality based. The water quality standard for DO was maintained in this case, therefore the proposed $cBOD_5$ and DO limits are appropriate.

The model predicted that the discharge will have no significant impact on Cherrystone Creek under 7Q10 conditions. If you have any questions or need any additional information, please do not hesitate to contact me.

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge to CHERRYSTONE CREEK.

File Information

File Name:	U:\Planning\Planning\Modeling\VA0020524\VA0020524_A.mod
Date Modified:	July 14, 2005

Water Quality Standards Information

Stream Name:	CHERRYSTONE CREEK
River Basin:	Roanoke River Basin
Section:	2
Class:	III - Nontidal Waters (Coastal and Piedmont)
Special Standards:	None

Background Flow Information

Gauge Used:	Banister River @ Halifax #02077000 Regression Analysis
Gauge Drainage Area:	275 Sq.Mi.
Gauge 7Q10 Flow:	25.85 MGD
Headwater Drainage Area:	38.29 Sq.Mi.
Headwater 7Q10 Flow:	3.59926 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges:	0 MGD
Incremental Flow in Segments:	0.094 MGD/Sq.Mi.

Background Water Quality

Background Temperature:	28 Degrees C
Background cBOD5:	2 mg/l
Background TKN:	0 mg/l
Background D.O.:	7.014539 mg/l

Model Segmentation

Number of Segments:	2
Model Start Elevation:	570 ft above MSL
Model End Elevation:	550 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0

Model Input File for the Discharge to CHERRYSTONE CREEK.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	TOWN OF CHATHAM STP
VPDES Permit No.:	VA0020524

Discharger Flow Information

Flow:	0.685 MGD
cBOD5:	25 mg/l
TKN:	15 mg/l
D.O.:	7 mg/l
Temperature:	28 Degrees C

Geographic Information

Segment Length:	2.34 miles
Upstream Drainage Area:	38.29 Sq.Mi.
Downstream Drainage Area:	39.38 Sq.Mi.
Upstream Elevation:	570 Ft.
Downstream Elevation:	555 Ft.

Hydraulic Information

Segment Width:	10 Ft.
Segment Depth:	1.185 Ft.
Segment Velocity:	0.559 Ft./Sec.
Segment Flow:	4.284 MGD
Incremental Flow:	0.102 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Mostly Straight
Pool and Riffle:	No
Bottom Type:	Gravel
Sludge:	None
Plants:	None
Algae:	None

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge to CHERRYSTONE CREEK.

Segment Information for Segment 2

Definition Information

Segment Definition:	A tributary enters.
Tributary Name:	LITTLE CHERRYSTONE CREEK

Tributary Flow Information

Flow:	0.434 MGD
cBOD5:	2 mg/l
TKN:	0 mg/l
D.O.:	7.017 mg/l
Temperature:	28 Degrees C

Geographic Information

Segment Length:	0.15 miles
Upstream Drainage Area:	39.38 Sq.Mi.
Downstream Drainage Area:	45.34 Sq.Mi.
Upstream Elevation:	555 Ft.
Downstream Elevation:	550 Ft.

Hydraulic Information

Segment Width:	10 Ft.
Segment Depth:	0.412 Ft.
Segment Velocity:	1.241 Ft./Sec.
Segment Flow:	4.718 MGD
Incremental Flow:	0.56 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Mostly Straight
Pool and Riffle:	No
Bottom Type:	Sand
Sludge:	None
Plants:	None
Algae:	None

"Model Run For U:\Planning\Planning\Modeling\VA0020524\VA0020524_A.mod On 7/25/2005 11:54:40 AM"

"Model is for CHERRYSTONE CREEK."
"Model starts at the TOWN OF CHATHAM STP discharge."

"Background Data"

"7Q10"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
3.5993,	2,	0,	7.015,	28

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.685,	25,	15,	,7,	28

"Hydraulic Information for Segment 1"

"Length"	"Width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
2.34,	10,	1.185,	.559

"Initial Mix Values for Segment 1"

"Flow"	"DO"	"cBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
4.2843,	7.012,	14.194,	8.308,	7.796,	28

"Rate Constants for Segment 1. - (All units Per Day)"

"k1",	"k1@T",	"k2",	"k2@T",	"kn",	"kn@T",	"BD",	"BD@T"
.7,	1.011,	3.846,	4.65,	.25,	.463,	0,	0

"Output for Segment 1"
"Segment starts at TOWN OF CHATHAM STP"

"Total" "Dist." "(mi)"	"Segm." "Dist." "(mi)"	"DO" "(mg/l)"	"cBOD" "(mg/l)"	"nBOD" "(mg/l)"
0,	0,	7.012,	14.194,	8.308
.1,	.1,	6.858,	14.038,	8.266
.2,	.2,	6.713,	13.884,	8.224
.3,	.3,	6.577,	13.731,	8.183
.4,	.4,	6.45,	13.58,	8.142
.5,	.5,	6.331,	13.431,	8.101
.6,	.6,	6.22,	13.283,	8.06
.7,	.7,	6.116,	13.137,	8.019
.8,	.8,	6.019,	12.993,	7.979
.9,	.9,	5.929,	12.85,	7.939
1,	1,	5.845,	12.709,	7.899
1.1,	1.1,	5.767,	12.569,	7.859
1.2,	1.2,	5.694,	12.431,	7.819
1.3,	1.3,	5.627,	12.294,	7.78
1.4,	1.4,	5.565,	12.159,	7.741
1.5,	1.5,	5.507,	12.025,	7.702
1.6,	1.6,	5.454,	11.893,	7.663
1.7,	1.7,	5.405,	11.762,	7.624
1.8,	1.8,	5.36,	11.633,	7.586
1.9,	1.9,	5.319,	11.505,	7.548
2,	2,	5.281,	11.379,	7.51
2.1,	2.1,	5.247,	11.254,	7.472
2.2,	2.2,	5.216,	11.13,	7.434
2.3,	2.3,	5.188,	11.008,	7.396
2.34,	2.34,	5.178,	10.959,	7.381

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"Discharge/Tributary Input Data for Segment 2"
"Flow",   "cBOD5",   "TKN",     "DO",      "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.434,     2,         0,         ,7.017,    28

"Incremental Flow Input Data for Segment 2"
"Flow",   "cBOD5",   "TKN",     "DO",      "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.102,     2,         0,         ,7.019,    28

"Hydraulic Information for Segment 2"
"Length","Width",   "Depth",   "Velocity"
"(mi)",   "(ft)",    "(ft)",    "(ft/sec)"
.15,      10,        .412,      1.241

"Initial Mix Values for Segment 2"
"Flow",   "DO",      "cBOD",    "nBOD",    "DOSat",   "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
4.8203,   5.383,     10.296,    6.56,      7.799,     28

"Rate Constants for Segment 2. - (All units Per Day)"
"k1",   "k1@T", "k2",    "k2@T",  "kn",   "kn@T",  "BD",    "BD@T"
1.7,    2.455,  20,      24.179,  .6,     1.111,   0,       0

"Output for Segment 2"
"Segment starts at LITTLE CHERRYSTONE CREEK"
"Total",  "Segm."
"Dist.",  "Dist.",   "DO",      "cBOD",    "nBOD"
"(mi)",   "(mi)",    "(mg/l)", "(mg/l)", "(mg/l)"
2.34,     0,         5.383,     10.296,    6.56
2.44,     .1,        5.504,     10.172,    6.524
2.49,     .15,       5.56,      10.111,    6.506


"END OF FILE"
```

MEMORANDUM

11 North Hamilton Street

State Water Control Board
P. O. Box 11143

Richmond, VA. 23230

SUBJECT: Proposed Amendment to Adopted Roanoke River Basin 303(e) Plan and Chatham STP NPDES Permit

TO: R. V. Davis

FROM: W. S. Estes, WCRO

DATE: February 12, 1979

COPIES: D.F. Jones, D.R. Ingram

Old Memo, has been incorporated into WQAP.

The proposed amendment to the Roanoke Basin 303(e) Plan recommends a change in the level of treatment required for the Town of Chatham sewage treatment facilities. The existing plan assumes a required treatment efficiency of 93% for the facility based on a discharge of 0.54 mgd into Cherrystone Creek. An assumed assimilative capacity of 71 lbs/day of BOD of water is based on the TVA modeling equation.

The plan noted that this assimilative capacity was based on very limited data and suggested that studies be conducted to develop a better data base and that a mathematical model characteristic of Cherrystone Creek supplemented with field data be developed to confirm assimilative capacity as presented by the TVA equation. The staff of the State Water Control Board undertook implementation of the recommendation to develop a mathematical model characteristic of Cherrystone Creek with field data base. Field data were collected on September 6, 7 and 15, 1978, for the development of a mathematical model specific to the Cherrystone Creek.

The detailed model developed utilizing actual field data indicates an allowable BOD_5 of approximately 125 lbs/day and an effluent dissolved oxygen content of 7.0 mg/l for the proposed Chatham discharge. This translates to a required treatment efficiency of approximately 87.5% for a discharge of 0.5 mgd.

This segment of Cherrystone Creek is classified as an Effluent Limiting Segment, Class III A. No change in stream classification is anticipated.

STAFF CONCLUSION AND RECOMMENDATION

The staff has concluded that the subject plan and permit should be amended to reflect the revised allowable discharge (125 lbs/day BOD_5) for the proposed Chatham STP in accordance with the results of the intensive stream survey-water quality analysis results. The staff, therefore, requests that the Executive Secretary authorize the convening of a public hearing for the purpose of receiving comments on the proposed amendments.

APPROVED: _____
Executive Secretary

DATE: FEB 14 1979

cab

IX. 1

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Chatham STP - #VA0020524

TO: Kirk Batsel

FROM: Amanda Gray

DATE: July 1, 2005

COPIES: File

This memo supersedes the July 24, 2003 (Revised 12/17/03) memo concerning the subject VPDES permit.

The Chatham STP discharges to Cherrystone Creek near Chatham, VA. Stream flow frequencies are required for this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The VA DEQ conducted several flow measurements on Cherrystone Creek and Tanyard Branch from 1993 to 1999. The measurements on Tanyard Branch were made near the mouth at Chatham, VA. The measurements at each site correlated very well with the same day daily mean values from the continous record gage on Banister River at Halifax, VA #02077000. The measurements and daily mean values were plotted on a logarithmic graph and a best-fit line was drawn through the data points. The required flow from the reference gages was plotted on the regression line and the associated flow frequencies at the measurement sites were determined from the graph.

The flow frequencies at the discharge point were determined by adding together the flow frequencies determined for each measurement site. The data for the reference gage, the measurement sites and the discharge point are presented below:

Banister River at Halifax, VA #02077000:

Drainage Area: 547 mi^2

1Q10 = 20 cfs	High Flow 1Q10 = 86 cfs
7Q10 = 40 cfs	High Flow 7Q10 = 170 cfs
30Q5 = 77 cfs	High Flow 30Q10 = 223 cfs
30Q10 = 56 cfs	Harmonic Mean = 214 cfs

Cherrystone Creek, above Tanyard Branch, at Chatham, VA #02076340:

Drainage Area: 36.18 mi^2

1Q10 = 3.227 cfs	High Flow 1Q10 = 9.609 cfs
7Q10 = 5.42 cfs	High Flow 7Q10 = 15.997 cfs
30Q5 = 8.846 cfs	High Flow 30Q10 = 19.598 cfs
30Q10 = 6.971 cfs	Harmonic Mean = 19.003 cfs

Tanyard Branch, at mouth, at Chatham, Va. #02076350:

Drainage Area: 2.11 mi^2

1Q10 = 0.130 cfs	High Flow 1Q10 = 0.462 cfs
7Q10 = 0.238 cfs	High Flow 7Q10 = 0.835 cfs
30Q5 = 0.420 cfs	High Flow 30Q10 = 1.056 cfs
30Q10 = 0.319 cfs	Harmonic Mean = 1.019 cfs

Adding together the flow frequencies for Cherrystone Creek and Tanyard Branch because the discharge is at the confluence:

Cherrystone Creek at discharge point:

Drainage Area: 38.29 mi^2

1Q10 = 3.357 cfs (2.17 MGD)	High Flow 1Q10 = 10.071 cfs (6.51 MGD)
7Q10 = 5.658 cfs (3.66 MGD)	High Flow 7Q10 = 16.832 cfs (10.88 MGD)
30Q5 = 9.266 cfs (5.99 MGD)	High Flow 30Q10 = 20.654 cfs (13.35 MGD)
30Q10 = 7.29 cfs (4.71 MGD)	Harmonic Mean = 20.022 cfs (12.94 MGD)

The high flow months are January to April.

This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in Cherrystone Creek upstream of the discharge point.

If there are any questions concerning this analysis, please let me know.

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

For retrieving significant amount of data, please e-mail: Roger Stewart

Station

Stations ID:	4ACRR003.56
Location:	BUSINESS ROUTE 29, ABOVE CHATHAM STP - P
County/City:	PITTSYLVANIA COUNTY
State:	VIRGINIA
Region:	SCRO **Description:** South Central Regional Office
Latitude:	36° 48' 13"
Longtitude:	-79° 23' 37"
Stream Name:	CHERRYSTONE CREEK
Level 1 Code:	STREAM **Description:** Station sample at stream (freshwater,freeflow,surface water)
Level 2 Code:	AMBNT **Description:** Monitor ambient conditions of environment
Level 3 Code:	AWTSHD **Description:** Ambient Watershed Station
Level 4 Code:	
Level 5 Code:	
HUC Code:	03010105
USGS Catalog Unit Name:	BANISTER
USGS Accounting Unit Name:	ROANOKE
USGS Sub-Region Name:	CHOWAN-ROANOKE
USGS Region Name:	SOUTH ATLANTIC-GULF
Major Basin Code:	03 **Description:** SOUTH ATLANTIC-GULF
Minor Basin Code:	4 **Description:** Roanoke & Yadkin River Basin
Subbasin Code:	A **Description:** Roanoke River Subbasin
Water Shed Code:	L66 **Description:** Cherrystone Creek
Topo Map Number:	047C **Description:** CHATHAM
Date First Sampled:	12/12/1988
Date Last Sampled:	05/10/2005
Number of Visits:	80 Click here for list of Samples by Date and Time

Station 4ACRR003.56 Cherrystone Creek ambient Temperature
Buisness Route 29, Above Chatham STP

11/24/2003	10.81
9/2/2003	23.51
7/30/2003	22.41
6/5/2001	21.5
4/10/2001	20.6
2/13/2001	6.4
10/10/2000	10.9
8/15/2000	21.2
6/19/2000	25.4
4/12/2000	17.3
2/8/2000	4.6
12/15/1999	8.8
10/27/1999	13.3
8/23/1999	22
6/1/1999	20
3/11/1999	6.5
12/7/1998	14.8
9/15/1998	21.7
6/22/1998	24.4
3/9/1998	13.8
12/8/1997	4.9
9/2/1997	23
6/5/1997	20.8
3/10/1997	11.5
12/10/1996	5.5
9/9/1996	23.9
6/5/1996	19.4
3/12/1996	5.7
12/19/1995	5.4
9/11/1995	21.6
6/12/1995	22.4
3/21/1995	13
12/12/1994	5.5
9/15/1994	20.2
6/13/1994	20.3
3/10/1994	7.9
9/20/1993	19.1
6/22/1993	23

90th % =	**23.153**

Station 4ACRR003.56 Cherrystone Creek ambient pH values
Buisness Route 29, Above Chatham STP

11/24/2003	7.06
9/2/2003	7.03
7/30/2003	6.99
6/5/2001	7.5
4/10/2001	8.2
2/13/2001	7.9
10/10/2000	8.2
8/15/2000	7.7
6/19/2000	7.1
4/12/2000	7
2/8/2000	6.9
12/15/1999	7.1
10/27/1999	8
8/23/1999	7.4
6/1/1999	8.2
3/11/1999	6.8
12/7/1998	6.9
6/22/1998	7.7
3/9/1998	7.4
12/8/1997	7.1
9/2/1997	6.7
6/5/1997	7.3
3/10/1997	7.5
12/10/1996	7.5
9/9/1996	6.9
6/5/1996	7.8
3/12/1996	7.2
12/19/1995	7.2
9/11/1995	7.7
6/12/1995	6.7
3/21/1995	8.1
12/12/1994	8.2
9/15/1994	7.8
6/13/1994	7.64
3/10/1994	7.7
9/20/1993	7.5
6/22/1993	7.7

90th % =	**8.14**
10th % =	**6.9**

ATTACHMENT 10

303(d) LISTED SEGMENTS

2006 DEQ-SCRO Water Quality Assessment Impaired Waters Factsheets

Cherrystone Creek *IR CATEGORY:* **5A**

WATERBODY SIZE: **8.43 Miles**

Cherrystone Creek mainstem from its mouth on the Banister River upstream to Cherrystone Creek dam.

ASSOCIATED ADB ASSESSMENT UNITS:

VAC-L66R_CRR01A00		
VAC-L66R_CRR02A00		
VAC-L66R_CRR03A00		

IMPAIRED AREA ID: **VAC-L66R-01** *TMDL PROJECT ID:* **00381**

This segment does not support the **Recreation** use. This segment is impaired for **Total Fecal Coliform**

SOURCES: **Source Unknown**

TMDL DUE DATE: **2008** *1999 CONSENT DECREE?:* **Y**

Station IDs:
4ACRR003.56 (Ambient)
Total Fecal Coliform - 1/8 Violation Rate E. coli - 1/9 Insufficient Data
4ACRR000.80 (Ambient, 1999 FT/Sediment & 2002 FT/Sediment)
Total Fecal Coliform - 7/20 Violation Rate 1999 Hg 1 Species

Bacteria TMDL Development for the Banister River, Bearskin Creek, Cherrystone Creek, Polecat Creek, Stinking River, Sandy Creek, and Whitehorn Creek Watersheds

Submitted by

Virginia Department of Environmental Quality

Prepared by

GEORGE MASON UNIVERSITY

and

THE Louis Berger Group, INC.
2445 M Street, NW Washington, DC 20037

September 2007

3.5 Fecal Coliform Source Assessment

This section focuses on characterizing the sources that potentially contribute to the fecal coliform loading in the Banister River watershed. These sources include permitted facilities, sanitary sewer systems and septic systems, livestock, wildlife, pets, and land application of manure and biosolids. Chapter 4 includes a detailed presentation of how these sources are incorporated and represented in the model.

3.5.1 Permitted Facilities

Data obtained from the DEQ's South Central Regional Office Regional Office indicate that there are 8 individually permitted facilities currently active or under application within in the Banister River Watershed. The permit number, design flow, and status for each permit are presented in **Table 3-13** and shown in **Figure 3-12**.

The available flow data for the permitted facilities was retrieved and analyzed. Bacteria concentrations were not recorded for any of the permitted facilities within the watershed. Average flows for the permitted facilities were used in the HSPF model set-up and calibration. The waste treatment plants use chlorine for disinfection, and many measure total contact chlorine as an indication of fecal coliform levels. The available data indicate that adequate disinfection was achieved at the plants, and that these facilities were not a large source of fecal coliform loading. DMR data is summarized in Appendix A.

Table 3-13: Individual Permitted Facilities within the Banister River Watershed

Permit No	Facility Name	Receiving Stream	Status	Size	Category	Design Flow (GPD)	Permitted to Discharge Bacteria? (Y/N)
VA0006513	Gretna Town - Water Treatment Plant	Georges Creek	Active	Minor	Industrial	27,000	N
VA0020524	Chatham Town - Sewage Treatment Plant	Cherrystone Creek	Active	Minor	Municipal	685,000	Y
VA0022721	Halifax County Schools Meadville Elem	Sandy Creek/U.T.	Active	Minor	Municipal	5,100	N
VA0022730	Halifax County Schools Sydnor Jennings Elem	Bradley Creek/U.T.	Active	Minor	Municipal	5,100	N
VA0027707	Pittsylvania Co - Mount Airy Elementary School	Blacks Creek, UT	Active	Minor	Municipal	5,000	N
VA0027715	Pittsylvania Co - Union Hall Elem School	Wet Sleeve Creek, UT	Active	Minor	Municipal	6,000	N
VA0063843	Gretna Town - Sewage Treatment Plant	Georges Creek	Active	Minor	Municipal	350,000	Y
VA0001309	Cook Composites and	Banister	Active	Minor	Industrial	50,000	N

Table 3-13: Individual Permitted Facilities within the Banister River Watershed							
Permit No	Facility Name	Receiving Stream	Status	Size	Category	Design Flow (GPD)	Permitted to Discharge Bacteria? (Y/N)
	Polymers Co	River, UT					
VA0001643	Jones Patio Doors Inc and Holleman Acres	Banister River	History	Minor	Industrial	73,000	N
VA0023442	DOC Chatham Diversion Center	Green Rock Branch, UT	Active	Minor	Municipal	21,000	N
VA0074063	Hatcher Center - Sewage Treatment Plant	Sandy Creek, UT	History	Minor	Municipal	10,000	Y

There are also general permits issued within the watershed. Latitudes and longitudes were not consistently available for the general permits and therefore these facilities could not be mapped. The active and application general permits are shown in **Table 3-14**. The flow from all permitted dischargers will be considered in model setup and calibration.

Table 3-13: Active and Application General Permits within the Banister River Watershed			
Permit No	Facility	Receiving Stream	Discharge (GPD)
VAG404183	Residence	Banister River UT	450
VAG404088	Residence	Gibson Creek UT	450
VAG404087	Residence	Banister River UT	450
VAG407226	Residence	UT to Banister River	600
VAG402031	Residence	Banister River	1,000
VAG407210	Residence	Banister River UT	1,000
VAG402084	Residence	UT Bannister River	300
VAG407202	Residence	UT to Runaway Creek	300
VPG270077	Poultry Facility	N/A	N/A
VAR51737	Colonial Pipeline	N/A	N/A
VPA00513	Industrial	N/A	N/A
VPA00514	Industrial	N/A	N/A
VPA00522	Industrial	N/A	N/A
VPA00563	Industrial	N/A	N/A
VPA00566	Industrial	N/A	N/A
VPA02048	Industrial	N/A	N/A
VPA00514	Industrial	N/A	N/A
VPA00566	Industrial	N/A	N/A
VPA005x2	Industrial	N/A	N/A

The pollutant concentrations were simulated over the entire duration of a representative modeling period, and pollutant loads were adjusted until the standard was met. The pollutant loads were calculated at the outlet of each impaired segment and include the loads from all upstream reaches and WLAs. The development of the allocation scenarios was an iterative process requiring numerous runs where each run was followed by an assessment of source reduction against the water quality target. The long-term average *E. Coli* loads and coefficient of variations were determined to implement the final allocation scenarios and to express the TMDL on a daily basis. Assuming a log-normal distribution of data and a probability of occurrence of 95%, the maximum daily loads were determined using the following equation (*USEPA OWOW 2007 Options for Expressing Daily Loads in TMDLs*):

$$MDL=LTA\times Exp[z\sigma-0.5\sigma^2]$$

Where;

MDL = maximum daily limit (cfu/day)

LTA = long-term average (cfu/day)

z = z statistic of the probability of occurrence

$\sigma^2 = \ln(CV^2+1)$

CV = coefficient of variation

The following sections present the waste load allocation (WLA) and load allocations (LA) for the eight impaired segments.

5.4 Waste Load Allocation

This section outlines the waste load allocations (WLA) for each impaired segment. It presents the existing and allocated loads for each permitted (VPDES) facility contributing to the impaired segment.

The existing load for general domestic permits is based on the allowable flow rate of 1,000 gal/day and a maximum *E. coli* concentration of 126 cfu/100 ml. The allocated load for domestic sewage facilities is based on the actual design flow of the system as presented in **Table 3-17**. This load is computed by applying a factor of five to the actual design flow of the system to account for future growth. While the growth-expanded

WLA is presented individually for each facility, it will be allocated to both new and existing facilities at the discretion of the permitting agency staff through permit issuances.

In general, the waste load allocation for point sources under individual VPDES permits was set assuming that they were operating at five times their design flow at their permitted maximum average concentration. The factor of five was introduced as a conservative measure to account for potential growth. This growth-expanded allocation for the individual permitted facilities was calculated and presented based on the current design limits of existing permits in the watershed, but it will be allocated to both new and existing permits as needed on a first-come, first-served basis. All current permit limits remain in effect and can only be altered through the VADEQ permitting process. Allocation of bacteria loadings shall be determined at the discretion of DEQ staff.

5.5 Load Allocation Development

The reduction of loadings from nonpoint sources, including livestock and wildlife direct deposition, is incorporated into the load allocation. A number of load allocation scenarios were developed in order to determine the final TMDL load allocation. Fecal coliform loading and instream fecal coliform concentrations were estimated for each potential scenario using the HSPF model for the hydrologic period of January 2000 to December 2005. **Table 5-1** shows the key load allocation scenarios that were implemented to arrive at the final TMDL allocations. It should be noted that these key scenarios were implemented for all segments. However, additional scenarios were also implemented when deemed necessary to attain the final TMDL. The following is a brief summary of the key scenarios:

- Scenario 0 is the existing load, no reduction of any of the sources.
- Scenario 1 represents elimination of human sources (septic systems and straight pipes).
- Scenario 2 represents the elimination of human sources (septic systems and straight pipes) as well as half the direct instream loading from livestock.
- Scenario 3 represents elimination of the human sources (septic systems and straight pipes) as well as the direct instream loading from livestock.
- Scenario 4 represents the direct instream loading from wildlife (all other sources are eliminated).
- Scenario 5 represents the elimination of the direct loading from nonpoint sources and a 50% reduction of the wildlife contribution.

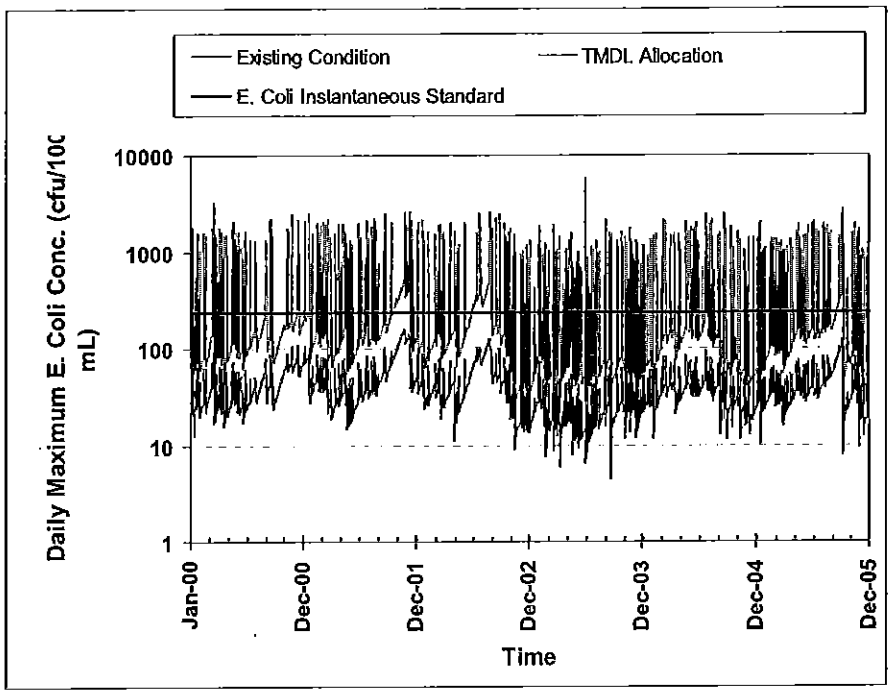


Figure 5-6: Bearskin Creek (Segment VAC-L65R-02) Instantaneous *E. coli* Concentrations under Existing Conditions and the Allocation Scenario

5.9 *Cherrystone Creek (Segment VAC-L66R-01)*

5.9.1 Cherrystone Creek Segment Waste Load Allocation

There are two permitted facilities discharging bacteria to Cherrystone Creek (Segment VAC-L66R-01). For this TMDL, following DEQ guidance the waste load allocation for such facilities is to assume the discharge at five-times the design flow limits and bacteria concentrations at the existing *E. coli* standard of 126 cfu/100mL. **Table 5-9** shows the existing and allocated loads from the dischargers in Cherrystone Creek (Segment VAC-L66R-01).

Table 5-9: Cherrystone Creek (Segment VAC-L66R-01) Waste load Allocation for *E. coli*

Point Source	Facility Type	Existing Load (cfu/yr)	Allocated Load (cfu/yr)	Percent Reduction
VA0023442	DOC Chatham Diversion Center	3.67E+10	1.83E+11	
VA0020524	Chatham Town - STP	1.13E+12	5.67E+12	-
Total		**1.17E+12**	**5.86E+12**	-

5.9.2 Cherrystone Creek Allocation Plan and TMDL Summary

The requirements to meet the calendar month *E. coli* geometric mean water quality standard of 126 cfu/100mL and the instantaneous water quality standard of 235 cfu/100mL for Cherrystone Creek (Segment VAC-L66R-01) are **(Table 5-10)**:

- 100 % reduction of the human sources (failed septic systems and straight pipes).
- 100 % reduction of the direct instream loading from livestock.
- 94 % reduction of bacteria loading from agricultural and urban nonpoint sources.
- 25% reduction of bacteria loading from direct deposition from wildlife
- No reductions from the forested land (wildlife indirect loads)

The coefficient of variation of the simulated daily loads for Cherrystone Creek (Segment VAC-L66R-01) is 1.68.

Table 5-10: Cherrystone Creek (Segment VAC-L66R-01) Distribution of *E. coli* Load under Existing Conditions and TMDL Allocation

Land Use/Source	Annual Average *E. coli* Loads (cfu/yr)		Reduction (%)	Maximum Daily Loads (MDL) for Allocation
	Existing	Modeled Loads for Allocation		(cfu/day)
Forest	3.32E+11	3.32E+11	0.0%	3.12E+09
Cropland	1.14E+12	6.85E+10	94.0%	6.45E+08
Pasture	2.07E+13	1.24E+12	94.0%	1.17E+10
Low Density Residential/Pets	6.44E+13	3.86E+12	94.0%	3.64E+10
Medium Density Residential/Pets	2.14E+13	1.28E+12	94.0%	1.21E+10
High Density Residential/Pets	1.32E+13	7.93E+11	94.0%	7.47E+09
Commercial/Industrial	6.40E+12	3.84E+11	94.0%	3.62E+09
Cattle - Direct Deposition	1.75E+13	0.00E+00	100.0%	0.00E+00
Wildlife-Direct Deposition	1.40E+13	1.05E+13	25.0%	9.88E+10
Failed Septics & Straight Pipes	3.15E+08	0.00E+00	100.0%	0.00E+00
Point Source	4.71E+10	5.86E+12	0.0%	1.60E+10
Total Loads/Overall Reductions	**1.59E+14**	**2.43E+13**	**84.7%**	**1.90E+11**

The resulting geometric mean and instantaneous *E. coli* concentrations under the TMDL allocation plan are presented in **Figure 5-7** and **Figure 5-8.** **Figure 5-7** shows the

calendar month geometric mean *E. coli* concentrations for existing as well as allocation conditions. **Figure 5-8** shows the instantaneous *E. coli* concentrations under the allocations, as well as under existing conditions. For Cherrystone Creek (Segment VAC-L66R-01), the allocation results in bacteria concentrations that are consistently below both the geometric mean and instantaneous standards for *E. coli*. A summary of the TMDL allocation plan loads for Cherrystone Creek (Segment VAC-L66R-01) is presented in **Table 5-11.**

Table 5-11: Cherrystone Creek (Segment VAC-L66R-01) TMDL Allocation Plan Loads (cfu/day) for *E. coli*

WLA (Point Sources)	LA (Nonpoint sources)	MOS (Margin of safety)	TMDL
1.60E+10	1.74E+11	IMPLICT	1.90E+11

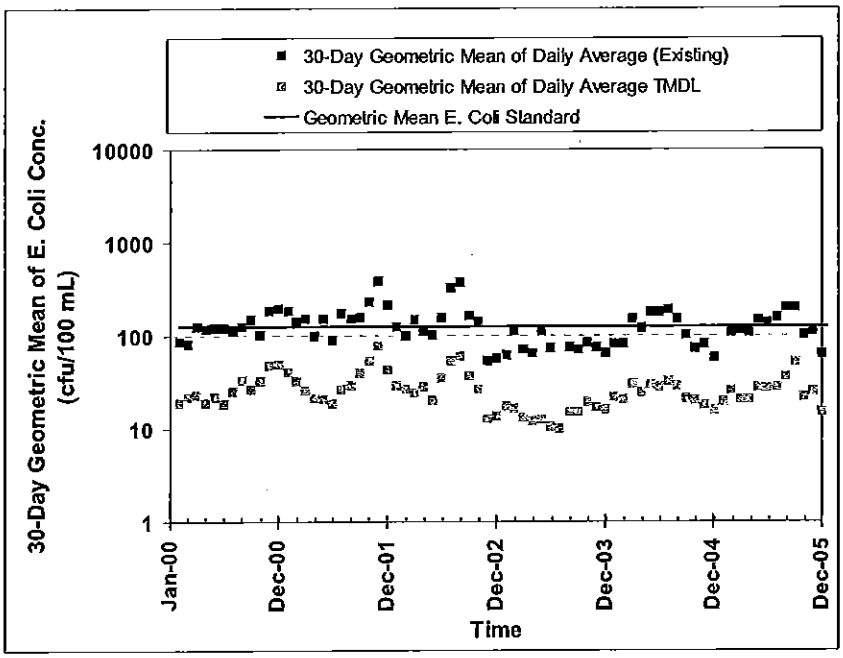


Figure 5-7: Cherrystone Creek (Segment VAC-L66R-01) Geometric Mean *E. coli* Concentrations under Existing Conditions and the Allocation Scenario

ATTACHMENT 11

TABLE A AND TABLE B - CHANGE SHEETS

TABLE A

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER	MONITORING CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001	TRC	1/Day to 1/D-Day	46 µg/l (monthly Avg.) and 57 µg/l (weekly maximum) to 39 µg/l (monthly Avg.) and 48 µg/l (weekly maximum)	The subject facility upgraded the plant during the last permit term. As part of this, the facility converted form the use of chlorine as the effluent disinfectant to UV. The plant does retain the ability to utilize chlorine as a backup disinfectant. Therefore, with this reissuance daily monitoring of chlorine has been replaced with "once per discharge day" when chlorine is being used. The limits were also reassessed and slightly modified.	KAB 12/30/08
001	*E. coli*	Special condition to Part I.A.		Since the facility now uses UV as primary disinfection, the applicable e. coli monitoring was moved to Part I.A.	KAB 12/30/08

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
Part I.A.	Added language to specify total number of toxic parameter analyses required per permit term (in response to compliance request)	KAB 12/30/08
Part B.	Revised and removed B.2. as facility uses UV now as primary means of disinfection.	KAB 12/30/08
Part C	Updated parameters and language in Part C.7.	KAB 12/30/08
None	Part C.8. added Attachment A monitoring to be submitted with the next reissuance application. Analysis will characterize the expanded wastewater flows at that time.	KAB 12/30/08

TABLE B

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001	TRC	1/D-Day to NONE	39 µg/l (monthly Avg.) and 48 µg/l (weekly maximum)	Based on comments received from permittee 1/26/09, which documented that the plant does not have the capability to utilize Chlorine as a back-up disinfectant. Chlorine disinfection was abandoned during 2007 upgrade. Therefore, all monitoring and limitations for chlorine were removed.	KAB 1/26/09

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
TRC special condition	Removed special condition. All subsequent permit lettering and references revised accordingly.	KAB 1/26/09

ATTACHMENT 12

EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST

Part I. Virginia Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Town of Chatham STP
NPDES Permit Number:	VA0020524
Permit Writer Name:	Kirk A. Batsel
Date:	December 30, 2008

Major [ ] **Minor** [X] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
8.a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
8.b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
8.c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations? (application waiver approved)	X		
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Does the permit include appropriate Pretreatment Program requirements?	X		
18. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
19. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
20. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
21. Has previous permit, application, and fact sheet been examined?	X		

Part II NPDES Draft Permit Checklist
Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet **or** permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a Comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the record discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
2.a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long-term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the Secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average?		X	
5.a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering state narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL? (consistent with)	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
4.a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
4.b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
4.c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
4.d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
4.e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
1.a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate his waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

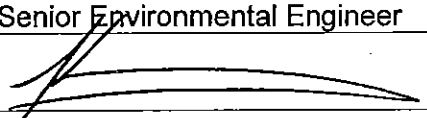
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		

II.F. Special Conditions – cont.	Yes	No	N/A
2. Does the permit include appropriate storm water program requirements?			X
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
5.a. Does the permit require implementation of the "Nine Minimum Controls"?			X
5.b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
5.c. Does the permit require monitoring and reporting for CSO events?			X
6. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41 • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O & M • Permit Actions • Property rights • Duty to provide information • Inspections and entry • Monitoring and reporting • Signatory requirement • Reporting requirements Planned change Anticipated non-compliance Transfers Monitoring Reports Compliance schedules 24-hour reporting Other non-compliance • Bypass • Upset			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Kirk A. Batsel
Title	Senior Environmental Engineer
Signature	
Date	December 30, 2008

ATTACHMENT 13

CHRONOLOGY SHEET

Chronology

Thursday, March 12, 2009

Facility Name: Chatham Town - Sewage Treatment Plant *VA0020524*

Date	*Event*	*Comment*
10/3/2007	Site visit:	EMC
10/22/2007	Site inspection report:	EMC
2/11/2008	Reissuance letter mailed:	
4/23/2008	First Application Reminder Phone Call:	spoke w/ Bob Hanson, he is working on application no questions at this time
6/5/2008	Second Application Reminder Phone Call:	spoke w/ Bob Hanson, sent him e cpoies of permit
8/5/2008	Application received at RO 1st time:	
8/7/2008	Reissuance application due:	
8/8/2008	App returned/Additional info requested 1st time:	sent deficiency email to Mr. hanson and copied Steve Elgin (Dewberry). Info due 9/1/08.
8/11/2008	Miscellaneous:	Mr. Hanson emails questions about application data. KAB responds.
8/27/2008	Application/Additional Info received at RO 2nd tim:	Additional applcation data recieved (1 analysis). Applications require 3 discrete samples.
8/28/2008	App returned/Additional info requested 2nd time:	via email
8/29/2008	App complete letter sent to permittee:	via email
8/29/2008	App, additional info received at RO 3rd time:	received email from Mr. Hanson requesting waiver from the additional 2 application analyses. KAB approved waiver request via email.
8/29/2008	Application Administratively complete:	
10/21/2008	App sent to State Agencies (list in comment field):	
10/27/2008	Application totally / technically complete:	
10/27/2008	Comments rec'vd from State Agencies on App:	No objections. Town of Halifax PWS intake point 48 miles downstream.
12/30/2008	Draft permit developed:	to Kip Foster for review (electronically)
1/20/2009	Draft reviewed:	KDF via email, proceed w/ owner review (still a question on tier)
1/22/2009	FS/SOB draft permit sent to owner:	owner comments due by 2/6/09.
1/26/2009	First time comments received from owner on draft:	owner indicates that use of chlorine as a disinfectant has been abandoned and no longer available. therfore these references will be removed from DP and FS.
1/27/2009	FS/SOB draft permit sent to owner 2nd time:	replacement pages w/ Chlorine referenecs removed sent via email

Facility Name: Chatham Town - Sewage Treatment Plant *VA0020524*

Date	*Event*	*Comment*
1/27/2009	— Owner concurrence of draft permit:	
1/27/2009	— Public notice authorization received from owner:	
1/27/2009	— Public notice letter sent to newspaper:	to The Chatham Star Tribune
1/27/2009	— Second time comments received from owner:	owner accepts revised draft via email
1/28/2009	— FS/SOB draft permit sent to EPA/OWPS:	electronically to Mark Smith
1/29/2009	— Local gov't notification:	
1/29/2009	— PN sent to CO for mailing list web site distrib:	to D. Hawkins via email
2/3/2009	— Old expiration date:	
2/3/2009	— Permit expires:	
2/4/2009	— Date of Public Notice:	2/5- 3/9/09
2/27/2009	— EPA concurrence on draft permit:	email comments recieved from Mark Smith, EPA - No Objections to draft permit